Greater Louisville Inc.
Air Toxics Task Force
Formal Comments on the STAR Program

General Comments

- The Greater Louisville, Inc. Air Toxics Task Force (Task Force) supports the long term goal of improving the quality of ambient air in our community, and to improve the quality of life and the economic climate for all in our hometown. This goal is consistent with the principles outlined by Mayor Abramson when the original version of the STAR Program was released for informal comment. These principles support an toxic air emissions reduction program which:

  Targets and identifies chemicals of concern;
  Clearly identifies the sources of these chemicals of concern;
  Sets realistic risk goals and emission limits; and
  Allows for a reasonable time frame to implement reductions.

- The *USEPA Region 4 Air Toxics Relative Risk Screening Analysis* (September 27, 2002), which the District has relied upon as a justification for the STAR Program, indicates the following:

  - Cancer risk from background sources – 29%
  - Cancer risk from area, mobile and non-mobile sources – 66.9%
  - Cancer risk from stationary sources – **6.1%**

  The proposed STAR Program regulations focus on only major stationary sources and ignore the source of 93.9% of the cancer risk and 84% of the non-cancer risk.

  See also *Cancer in Jefferson County: A Summary,* copy of which is attached.

- The Task Force has spent hundreds of hours reviewing and analyzing the proposed STAR Program regulations, analyzing the air toxics programs on which the STAR Program is based in part, and utilized the technical expertise and experience of approximately forty persons in that review and analysis, including the services of toxicologists, risk analysts, air modelers, and other regional and national experts in air quality.

- Based upon that review and analysis, the Task Force is proposing revisions to the version of the STAR Program regulations that was released for formal comment

on January 14, 2005. The revisions that the Task Force proposes are necessary to make the STAR Program technically and scientifically sound.

- Because of the complexity of the STAR Program, the Board should conduct a stakeholder process, consistent with the process described in the West Louisville Air Toxics Study Risk Management Plan, to consider the STAR Program as proposed by the District and the revisions proposed by the Task Force. The Risk Management Plan was developed in anticipation of the results of the West Louisville Air Toxics Study Risk Assessment, and was approved by representatives of the community, industry, environmental groups, and the Air Pollution Control District. The Risk Management Plan establishes an appropriate methodology for the development of a regulatory program that will assess all the sources of the air toxics in ambient air in Louisville.

- The proposed STAR Program actually calls for the use of a stakeholder process in developing regulations, since new regulation 5.30 Section 2.2.9 calls for "active and meaningful stakeholder involvement in the development of . . . the proposed Report and Plan" which will apply to area, mobile and non-mobile sources of emission of toxic air contaminants. There is no reason why the same stakeholder process should not be followed in the development of the STAR Program as it applies to stationary sources.

- The STAR Program is not based upon sound methodologies. The District has taken methodologies developed in other state or local programs and has not incorporated into the STAR Program all of the provisions of those other programs. In many instances, this means that the District has omitted necessary provisions of the other programs that should be included in the STAR Program in order to make it reasonable, technically sound and achievable. In addition, the District has in many instances amended the provisions of the other programs or does not apply the methodology of the program in the same manner as done in the other state or local program. These amendments, omissions and mixing of methodologies have not been subjected to peer review, and, because they have never been previously implemented together, it is undetermined what the actual outcome or result of this inappropriate mixing and amendment of methodologies and omission of key requirements may be. Consequently, there should be a careful and studied evaluation of the STAR Program through a stakeholder process.

Comments on the Preliminary Regulatory Impact Assessment

- KRS 77.185(2) provides that the Air Pollution Control Board "shall adopt procedural rules for promulgation of regulations", and establishes the minimum requirements for a Regulatory Impact Assessment. This statute also allows the Board to adopt rules that require that more information and analysis must be contained in a Regulatory Impact Assessment then the minimum information required by the statute. The Air Pollution Control Board has adopted more stringent provisions for a Regulatory Impact Assessment in Regulation 1.08 Section 7.

- As provided in Regulation 1.08 Section 7.2.1, the estimated cost and savings addressed in the Regulatory Impact Assessment shall include the "estimated capital and operating costs and savings associated with compliance with the proposed action for affected facilities." The Preliminary Regulatory Impact Assessment (PRIA) fails to comply with this regulatory requirement. The cursory and incomplete cost estimates provided in the PRIA are deficient and inadequate.

- The PRIA fails in any meaningful way to provide this information for the operating costs to implement the additional data collection and reporting requirements of Regulation 1.06, the changed malfunction reporting requirements of Regulation 1.07, the implementation of a malfunction prevention program pursuant to Regulation 1.20, the implementation of the enhanced LDAR program of Regulation 1.21, the effort necessary to calculate a BAC pursuant to Regulation 5.20,[1] the cost necessary to perform the calculations required by Regulation 5.21, or the cost of performing each Tier of the modeling pursuant to Regulation 5.22. These are only an example of some of the operating costs that will be required to comply with the STAR Program, which will require the hiring of new personnel, the training of new and existing personnel, the set up of record-keeping and reporting systems, the identification and design of new control equipment, and other actions necessary to implement the new requirements of the STAR Program.

- In Regulation 1.08 Section 7.2.2, the Board has also required more specific information for assessing the feasibility of alternatives considered in developing a regulation. The Regulatory Impact Assessment must include, as part of the discussion of the feasibility of alternatives considered, a description of:

    - the approach for reducing emissions;
    - the estimated level of emission reductions;
    - the available pollution prevention measures; and
    - the reason that the alternative was chosen or not chosen.

[1] Although the District has stated that it will calculate a BAC for each TAC in Categories 1, 2, 3 and 4 of Regulation 5.22 and post this information on its web-site, this information is not being incorporated into the Regulation. Therefore, the information posted on the web-site cannot be legally relied upon.

This information must be provided for each alternative that was considered in the Regulatory Impact Assessment. The PRIA fails to comply with this regulatory requirement.

- The PRIA fails to provide this information for the alternatives that were considered. In particular, the PRIA is virtually devoid of any discussion of the reasons why the alternatives that were considered were either chosen or not chosen. The District has stated that it has reviewed **all state** air toxics programs (*Response to Comment*: (Overall-8, pg.-3) and **some local** programs identified in footnote 12 of the PRIA, but has not provided the information required by Regulation 1.08 Section 7.2.2 for each of those programs. The PRIA does not include the approach that is used in each of those state and local programs for reducing emissions; the estimated level of emission reduction that those programs might achieve if applied in Louisville Metro; the available pollution control measures associated with those programs; and, in particular, does not state the reasons why the alternatives provided by those programs were chosen or not chosen. Since it is clear that the District has considered each of those programs as a potential alternative to the STAR Program, or relied upon those programs in part for drafting sections of the proposed STAR Program regulations, a discussion of those alternatives with that information is required in order to comply with Regulation 1.08 Section 7.

- Pursuant to the provisions of KRS 77.185(2)(e) and Regulation 1.08 Section 7.2.2, the District and the Board should consider the Greater Louisville, Inc. Air Toxics Task Force proposed revisions to the STAR Program as an alternative to the version 2 of the STAR Program that was released for public comment on January 14, 2005. Therefore, the District and the Board should address in the final Regulatory Impact Assessment the reasons that the proposed revisions contained in the Air Toxics Task Force proposed revisions were chosen or not chosen, as required by Regulation 1.08 Section 7.2.2.4.

- In Section 1 of the PRIA, the District also indicates that it has relied upon the *EPA Region 4 Air Toxics Relative Risk Screening Analysis* (September 27, 2002) which:

    - Is only "a '20,000 foot view' of potential impacts of toxic air pollution"
    - is "of a screening level nature only"
    - used data that was several years old (1996 TRI data and background concentration based upon 1990 information), and
    - is only intended to serve as a starting point for developing an air toxics monitoring strategy.

  An air toxics monitoring strategy was implemented as part of the West Louisville Air Toxics Study (WLATS). The WLATS Risk Assessment did not identify any of the Category 2 (Category 1A in the first version of the STAR Program) TACs as being of concern. Therefore, the Screening Analysis cannot be relied upon to

support the regulation of the Category 2 TACs in the same manner as the Category 1 TACs.

- In the PRIA, the District states that the "issue of high concentrations of toxic air contaminants (TACs or toxics) in Jefferson County is being addressed" for reasons that include that the *Screening Analysis* identifies "Jefferson County as having the highest potential adverse impact of toxics of all counties in the eight southeast states." While Jefferson County did rank as number 1 out of all 736 counties in EPA Region 4 in the *Screening Analysis*, this statement is essentially a mischaracterization of the meaning of the *Screening Analysis*. A detailed review of the 14 variables that contribute to the relative risk ranking methodology used in the *Screening Analysis* indicates that toxic emissions from industrial sources are not the factors that cause Jefferson County to be at the top of the *Screening Analysis* list.

    - In the *Screening Analysis*, 6 demographic statistics, 3 public health indices, 3 "NATA data" figures, geographic area, and the widely touted "RSEI" relative hazard rank were each weighted and compiled to yield a final matrix value for each county. Using these data and the EPA weighted methodology, Jefferson County had the highest matrix value of all counties in Region 4. However, statistical correlation of each contributing variable to the final matrix value shows that:

        - all six of the demographic statistics correlate fairly well to the study's final matrix values, with density of youth population correlating the most among all data considered (correlation factor = 0.88). All six demographic values correlated at a value at 0.57 or greater, suggesting that the greater population or population densities of the county, particularly the demographic sensitive populations (less than age 18 and greater than age 65), the more likely the county will rank high in the final matrix, without consideration of any emissions of toxic air contaminants or health related impacts;

        - the three 1996 National Air Toxics Assessment (NATA) data figures also seem to strongly influence the *Screening Analysis*, with correlation factors of 0.79, 0.78, and 0.73, respectively. However, it is significant to note that not only does the NATA data include emissions from all source sectors, and is not just limited to industrial emissions from stationary sources, but that the average diesel concentration as reported by NATA was the 4th most correlating value out of all fourteen considered (factor = 0.78). Therefore, it is important to note that mobile source emissions play a substantially significant role in effecting overall county rank;

- the 1999 Risk Screening Environmental Indicator (RSEI) relative hazard rank is the only factor of the 14 considered that includes Toxic Release Inventory (TRI) data from stationary sources. However, even considering the TRI data from stationary sources, this RSEI value correlates only somewhat to the Region 4 relative risk final matrix value with the correlation factor of only 0.56;

- the three public health indices considered had no statistically significant correlation to overall relative risk. Cancer incidence values from the ranked counties correlated at a value of only 0.28, death from lung disease correlated at a value of only 0.06, and deaths from heart disease had a negative correlation value of -0.18. Therefore, statistically speaking, the higher a county is listed in the *Screening Analysis*, the likelihood of dying from heart disease is actually reduced.

- The *Screening Analysis* also indicates that Jefferson County's rate of cancer incidents per 100,000 people is 22nd in the region, behind 12 other Kentucky counties. Jefferson County's rate of respiratory deaths per 100,000 people is 230th in the region behind 57 other Kentucky counties, and its rate of cardiovascular deaths per 100,000 people is 525th in the region, behind 84 other Kentucky counties. These data clearly demonstrate that there are other underlying variables that are much more significant than risk from emissions of air toxics from stationary sources that have a much greater impact on public health.

- This demonstrates that the proposed STAR Program regulations, which rely virtually exclusively on emissions reductions from industry, will not significantly improve Jefferson County's relative risk status, as the proposed STAR Program regulations are fundamentally flawed in two key considerations. First, toxic emissions from industry were only reflected in 1 of the 14 variables (RSEI rank) in the *Screening Analysis*, and the relatively weak correlations suggest that even if RSEI rank were to improve greatly, overall relative risk would not improve in any corresponding manner. Second, as risk from air toxics does not statistically influence public health, reductions in risk from air toxics will not improve public health.

- Finally, the District's reliance upon the *Screening Analysis* as a basis for developing a regulatory program is fundamentally flawed and inconsistent with the *Screening Analysis* itself. As stated in the *Screening Analysis*, it is only "a '20,000 foot view' of potential impacts of toxic air pollution;" is "of a screening level nature only;" used data that is several years old (1996 TRI data and background concentrations based upon 1990 information); and is only intended to serve as a starting point for developing air toxics monitoring strategy. An air toxics monitoring strategy was implemented

as part of the West Louisville Air Toxics Study (WLATS). The WLATS Risk Assessment did not identify any of the Category 2 TACs as of concern based on the monitoring sample results. Therefore, there is not a sufficient basis to regulate the Category 2 TACs on the same basis or to the extent as the Category 1 TACs, and regulation of the Category 2 TACs is unreasonable and unfounded.

- One of the authors of the *Screening Analysis* has also stated that use of the *Screening Analysis* to identify toxic air contaminants for purposes of regulation is inappropriate. In a presentation made by Dr. Kenneth Mitchell to the State Air Toxics Work Group on January 26, 2005, the purpose of the *Screening Analysis* was to focus attention and resources on those areas that warrant additional evaluation such as gasoline and diesel particulates.
- In the purpose section of the PRIA, the District indicates that EPA has provided methods of assessing and addressing air toxics, which is identified in footnote 13. However, there is no discussion of the feasibility of using the information referenced in footnote 13 as an alternative to the STAR Program, and why the methods of assessing and addressing air toxics provided by EPA were chosen or not chosen for the STAR Program. In many instances, the STAR Program is contrary to those EPA methodologies.

- The comparison with any minimum or uniform standards is required, pursuant to Regulation 1.08 Section 7.1, to be a "comparison with any minimum or uniform standards under the [Clear Air] Act or any other federal or state requirement." What is characterized as a comparison in the PRIA, is no more than a statement of changes that have been made. The comparison does not identify uniform or minimum standards required under federal or state requirements, and does not describe how the provisions of the STAR Program differ from those minimum or uniform federal or state standards.

    - The discussion of the comparison regarding Regulation 1.02 is inadequate, since it fails to contrast or explain the differences between the new and amended definitions and the definitions used by EPA and the Kentucky Division for Air Quality.

    - The comparison for Regulation 1.06 fails to identify what the enhanced emissions reporting information is, or how that information differs from what is currently required under federal and state requirements.

    - The comparison for Regulation 1.07 claims that the automatic exemption for a malfunction as a violation is inconsistent with EPA policy memos, but does not describe what the federal or state regulatory requirement is, or whether the federal or state regulatory requirement does allow the same exemption. Similarly, the difference in the data reporting requirements between federal and state requirements is not described or provided.

- In the comparison for Regulation 1.20, no information is provided as to whether there is any minimum or standard requirement at the state or federal level.

- The comparison for Regulation 1.21 makes a cursory attempt to identify that there are differences with the federal and state requirements, but does not actually identify what the minimum or uniform standard is at the federal or state level, or how that federal or state standard is applied differently or changed under the STAR Program.

- The comparison for Regulation 5.01 does not describe how the definitions of this section differ from the definitions used at the federal or state level, and does not explain why the general duty provision under Section 3 is markedly different than the general duty provision in 401 KAR 63:020.

- The comparison for Regulation 5.20 does not identify whether there is a state or federal minimum or uniform standard for developing a benchmark ambient concentration, or a similar type of number.

- The comparison for Regulation 5.21 indicates that the Kentucky Division for Air Quality has identified a policy for demonstrating compliance with 401 KAR 63:020 for new sources by using a cancer risk that does not exceed 1-in-a-million. That statement is not correct. KRS 13A.130 prohibits the Kentucky Division for Air Quality from implementing such a policy unless it is incorporated into a regulation. Since a standard for a cancer risk of 1-in-a-million has not been established in 401 KAR 63:020, the Kentucky Division for Air Quality can neither implement such a policy nor enforce a cancer risk of 1-in-a-million as a standard. More importantly, the comparison of Regulation 5.21 fails to identify what the minimum or uniform standards are at the federal or state leve,l and does not contrast what the STAR Program standards are to those minimum or uniform federal or state standards.

- The comparison for Regulation 5.21 also cites the Clean Air Act as requiring a strategy to reduce the incidence of cancer attributed to emissions stationary sources by not less than 75%. However, the comparison does not describe what baseline has been established to determine what the cancer incidence is due to the emissions from stationary sources in Louisville Metro, so there is no baseline against which such a reduction can feasibly be measured or determined.

- The comparison for Regulation 5.22 fails to identify whether there are any federal or state minimum or uniform standards for the type of modeling that is required. Supposedly, the Tier 1 and 2 tables are based upon the Michigan program, but the District does not explain the differences

between the Tier 1 and Tier 2 modeling as promulgated in the STAR Program and the Tier 1 and Tier 2 modeling under the Michigan program.

- In its response to the informal comments, the District states that it developed the proposed STAR Program based on the following:

> The District has reviewed all of the state toxics programs. The STAR Program was designed to incorporate the components that the District considered to be the most appropriate for Louisville Metro. The District considers that the proposed approach for evaluating and addressing toxic air emissions is based on sound science, recognizes the credible work of reputable agencies and does not inefficiently duplicate work that has already been done, and provides the highest degree of certainty for regulated sources and the public.[2]

On that basis, the District considers that the standards established under the proposed STAR Program are "rigorous but achievable" based on the experience of "several mature state toxics programs" reviewed and evaluated by the District.[3]

- Conceptually speaking, the approach described by the District might be valuable in developing a new air toxics program for Louisville Metro, if the District were proposing to adopt a mature program as a whole, rather than in part, or if the program were developed as part of a stakeholder process, such as that recommended by U.S. EPA in its *Public Involvement Policy (May 2003)*[4] or outlined in the *Risk Management Plan* developed by the West Jefferson County Community Task Force ("WJCCTF") as part of the *West Louisville Air Toxics Study*.[5] However, the STAR Program does not adopt the regulations from another state or local air toxics program as a whole. Instead, the STAR Program proposes to adopt portions of different state or local regulations and then is combining – or changing -- them, without explanation, into an entirely new air toxics program with different applicability, purposes, standards and effects.

Consider the following examples:

Michigan's Air Toxics Program

Part 5 of the proposed STAR Program appears to be based primarily on Michigan's Air Toxics Program, Michigan Air Pollution Control Rule R. 336.1225 *et*

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[2] Response to Comment Overall-8, p. Overall-3.
[3] Response to Comment, 5.20-8, p. 5.20-3.
[4] Public Involvement Policy of the U.S. Environmental Protection Agency, May 2003. Available at www.epa.gov/policy2003/policy2003.pdf.
[5] West Jefferson County Community Task Force, West Louisville Air Toxics Study, Risk Management Plan, Part 1, Process and Framework, pp. 10-12. Available at www.apcd.org/toxics_risk_mgmt_plan.pdf.

seq., which only applies to new and modified sources required to obtain a permit.[6] It does not apply to existing sources like the proposed STAR Program.

Differences in T-BACT

Under Michigan's program, T-BACT (Best Available Control Technology for Toxics), does not apply to new or modified emission units that are in compliance with the following requirements:

- The maximum allowable emission of each toxic air contaminant from the new or modified emission unit or units is 0.1 pound per hour or less for a carcinogen or 1.0 pound per hour or less for non-carcinogenic contaminants;

- The applicable initial threshold based screening level is more than 200 micrograms per cubic meter;

- The initial risk screening level is more than 0.1 micrograms per cubic meter;

- The emission unit emits only toxic air contaminants that are particulates or VOCs, and are in compliance with best available control technology ("BACT") or lowest achievable emission rate ("LAER") requirements for particulates and VOCs;

- The emission unit meets standards which have been promulgated under Section 112(d) of the Clean Air Act, or for which a control a control technology determination has been made under Section 112(g) of the Clean Air Act with Certain conditions. [7]

There are no similar exceptions in the STAR Program and the District has provided no explanation in either the response to comments or the PRIA as to why such exceptions are not appropriate. The District has not stated in the PRIA the reasons that it chose to not accept these provisions of the Michigan program, while accepting other provisions.[8]

Differences in the use of models

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[6] Michigan Air Toxics Regulations, 2002 Air Toxics Guidance, p. 2, 3.
[7] Michigan Air Toxics Regulations, Air Toxics Guidance 2002, p. 3.
[8] APCD Regulation 1.08, Section 7.2.2.4.

Consider Michigan R. 227, *Demonstration of Compliance with Health-based Screening Levels*, by which a facility determines an acceptable emission rate. Under the proposed STAR Program, such tiers are used in proposed Regulation 5.22, *Procedures for Determining the Maximum Ambient Concentration of a Toxic Air Contaminant,* to determine a maximum ambient concentration that is then used to determine a source's risk in Regulation 5.21, *Environmental Acceptability*. Michigan R. 227 and the proposed STAR regulations appear to have two different purposes. If the Michigan regulation differs from the proposed STAR regulations, the District cannot justify its adoption on the basis of the Michigan regulation. The credibility and scientific soundness of the proposed STAR Program cannot be bootstrapped by reference unless the two programs are identical in all material aspects.

If the two regulations have the same purpose, why is the District proposing in Regulation 5.22 Section 4.2 to use a different averaging time for carcinogens in Tier 3 than that currently used by Michigan?[9] Regulation 5.20 Section 3.4 requires that an annual average time frame be used for BACc (cancer). The applicable time frames for Tier 3, *SCREEN3 or T-SCREEN*, are as follows:

> BAC with 8-hour averaging time, multiply by 0.44
> BAC with a 24-hour averaging time, multiply by 0.22, and
> BAC with an annual averaging time, multiply by 0.02.[10]

These time frames may also be found in an undated copy of *Appendix C, Detailed Background on Determining Acceptable Emission Levels in Tiers 1-3 of the Approach*, which is a guidance document from Michigan's program for its Tier 3, SCREEN3, and which the District has included as Attachment 1 of the PRIA. Michigan, however, has apparently updated its guidance that is different than the undated Appendix C referenced by the District as Attachment 1 of the PRIA. The 2002 guidance, which directs the user to the USEPA SCREEN3 Model User's Guide for more details, provides the following averaging time frames for SCREEN3:

> 3-hour averaging time, multiply by 0.9
> 8-hour averaging time, multiply by 0.7
> 24-hour averaging time, multiply by 0.4
> Annual averaging time, multiply by 0.08.[11]

The District does not discuss Michigan's 2002 guidance or explain technical basis upon which the District rejected the revised factors in the PRIA, as required by Regulation 1.08 Section 7.2.2.4.

Differences in standards

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[9] See Michigan Air Quality Dispersion Modeling Guidance, October 2002, p. 10.
[10] Regulation 5.22 Section 4.2.
[11] Michigan Air Quality Dispersion Modeling, October 2002, p. 10.

In Michigan, the Initial Threshold Screening Level ("ITSL") is the ambient air concentration of a contaminant this is not expected to result in an adverse noncancer effect in humans. It is the same as the BAC_{nc} determined in Regulation 5.20 Section 4 of the proposed STAR Program. Michigan guidance provides that if no data are available to determine the ITSL, the ITSL is set at a default value level of 0.1 micrograms per cubic meter.[12] Prior to setting the ITSL at the default value, Michigan directs its toxicologists to "pursue all potential leads for data that could be useful for setting a screening level."[13] There is no default value for Initial Risk Screening Levels, ("IRSL") which are based on an increased cancer risk of $1x10^{-6}$ and is equivalent to the BAC_c determined in Regulation 5.20 Section 3 of the proposed STAR Program.[14]

In the proposed STAR Program, the District has included a default value for the BAC_{nc} of 0.04 micrograms per cubic meter – 2.5 times lower than the equivalent Michigan ITSL default value.[15] For cancer, the District has a default value of 0.0004 micrograms per cubic meter.[16] The District's rationale for these default values is as follows:

> An environmental acceptability demonstration for a TAC that has been determined to be a carcinogen should reflect the additional cancer risk posed by that chemical. The District, however, recognizes that a significant effort may be involved in developing a unit risk estimate for a chemical. Therefore, the District will propose a default BAC_c value, similar to the concept of the default BAC_{nc} value established in Section 4.11.
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> Two possible approaches yield approximately the same result, 0.0004 [micrograms per cubic meter]. The first approach is to sort all of the BAC_c values that the District has derived so far. The 90^{th} percentile number is approximately 0.0004 [microgram per cubic meter]. The second approach is to divide the BAC_{nc} by the BAC_c for that TAC to determine how much more stringent the BAC_c is than the BAC_{nc}. The result for most TACs is between one and three orders of magnitude, with approximately equal numbers for one, two, and three orders of magnitude. Thus, the average difference is two orders of magnitude. Reducing the BAC_{nc} 0.04 [microgram per cubic meter] default value, which was based on a 95^{th} percentile analysis, by two orders of magnitude gives 0.0004 [micrograms per

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[12] Michigan Air Toxics Regulations, Air Toxics Guidance, 2002, p. 11; see also Michigan R.1232, by which the ITSL is determined and which does not include a regulation requiring the use of a default value.
[13] Id.
[14] See Michigan R.1229 -1231.
[15] Regulation 5.20 Section 4.11.
[16] Regulation 5.20 Section 3.3.4.

> cubic meter]. The District considers this default value to be one that will provide a reasonable level of protection given the uncertainly [sic] of the BAC_c that would be derived from using one of the methodologies in Section 3.3.4.[17]

Given that the District admits it would be required to hire or retain a qualified individual to determine whether a TAC should be considered a carcinogen pursuant to Regulation 5.20 Section 2.1.4,[18] the District's development of a unique default value for BAC_c and BAC_{nc} is surprising. The District's development of its unique default BAC_c and BAC_{nc} value and its rationale for rejecting the Michigan default value for noncarcinogens is not discussed in any further detail in the Response to Comments or at all in the PRIA. Because the District lacks expertise in toxicology, it should not develop its own more stringent BAC_{nc} default value or a completely new BACc default value by reference to Michigan.

The methodology that the District has used to set the default value is unsound. The District is effectively using a statistical analysis of values to develop a toxicological analysis of the cancer potency or non-cancer risk of different chemicals, which is scientifically and technically unsound.

Different Points for Evaluating Risk

Under the District's program, a source is required to evaluate the environmental acceptability of its risk in "ambient air," which the District has defined as anywhere beyond the fenceline. For the purpose of determining the concentration of an air contaminant that is or may be emitted by a stationary source, ambient air also includes the atmosphere, external to buildings, that is beyond the property line of that stationary source, regardless of whether the general public has access."[19] In so defining "ambient air," a source in Louisville Metro must evaluate its risk as if someone lived in its unsecured parking lot for 70 years/365 days/24-hours.

Michigan, however, has developed its program to evaluate risk differently at (1) a residence and (2) industrial properties[20] and public roadways. Essentially, under Michigan's program, if a source cannot demonstrate on an individual TAC by TAC basis that its new or modified unit will not meet the Initial Risk Screening Level (IRSL), i.e., a risk of one-in-a-million, Michigan allows the source to demonstrate compliance by showing that the emissions from the new unit and all other existing units at the source do not exceed the Secondary Risk Screening Level ("SRSL), i.e., a risk of one-in-a-hundred

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[17] Response to Comment 5.20-18, p. 5.20-7.
[18] See Response to Comment 5.20-7, p.5.20-3, referring to Regulation 5.20-7 Section 2.1.3, now renumbered as Section 2.1.4.
[19] Regulation 1.02, Section 1.7.
[20] For purposes of the Michigan program, "industrial property" means "only property where the activities are industrial in nature, for example, manufacturing, utilities, industrial research and development, or petroleum bulk storage." The term does not include farms or commercial establishments. Michigan R.336.1225(5).

thousand on a TAC by TAC basis.[21] Industrial sources that impact other industrial properties and/or roadways are allowed to emit up to ten times the IRSL for a specific unit or the SRSL for all new and existing units on the basis that industrial exposures are shorter in duration than residential exposures.

Michigan allows different exposure levels because the residents' exposure and the industrial worker/transients' exposures are equal --- even though the standards appear to allow a higher exposure concentration for industrial workers and transients. The reason that the two exposures are equal is because Michigan recognizes that workers and other transients spend less time at work and traveling on a public roadway than residents spend in their homes. Because of the shorter exposure times, the higher overall exposure concentrations on industrial properties and roadways is still equal to a risk $1x10^{-6}$, the same as that for a resident. If, in the future, the land use were to change, Michigan requires the source to notify it within 30 days of the actual land use change.[22] Within 60 days, the source must submit a plan to the Department detailing how it will comply with the more restrictive risk level for residential properties within one year.[23]

In establishing such a clear rule, Michigan has assured both sources and residents that future land use change is not prohibited and that public health will be protected if changes in land use occur. Moreover, Michigan's rule promotes economic development because sources evaluating whether to expand or modify their operations in Michigan may do so with certainty.

The District, however, rejects this aspect of Michigan's program, stating that --

> The District does not agree that this relaxation in the Michigan Program is appropriate for the Louisville Metro STAR Program. However, the District will add a provision to Regulation 5.21 Sections 2.3 and 2.6 that will allow it to consider land use and demographic factors in making a determination whether to approve a request for a modification of an environmental acceptability goal.

However, the District provides no reasons or explanation to demonstrate that there has been a "relaxation" of the Michigan program, or to explain why the Michigan provision is inappropriate for use in Louisville, something which the District must do to comply with Regulation 1.08 Section 7.2.2.4.

The District added the following discretionary language to Regulation 5.21 Sections 2.3 and 2.6:

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[21] Michigan R. 336.1225.
[22] Michigan R. 336.1225(4).
[23] *Id.*

> The District shall also consider relevant, including both current and up to 25 years in the future, demographic and land use factors.

Such discretionary language provides neither the clarity nor certainty of Michigan's regulation. Absent clear guidance, such as that found in the Michigan regulations or in a provision that allows the use of the nearest residence as the point of risk evaluation, the Task Force is concerned that the proposed STAR Program may be implemented in an arbitrary manner, especially in light of the District's characterization of Michigan's decision to regulate residential and industrial properties differently as a "relaxation." How will new and expanding businesses be able to evaluate their business opportunities in Louisville Metro? How will existing businesses know where to evaluate the risk from their facilities? How will the District re-evaluate future land use changes?

Different Modeling Requirements

There are significant differences in how the Tier 4 modeling is performed under the proposed Regulation 5.22 Section 5 and the same modeling under the Michigan program, according to Michigan Air Quality Dispersion Modeling Guidance. For example, Michigan, unlike the District, does not require the use of five year data sets to model compliance with its air toxics program, Rule 225.[24] Five year data sets are only required for use in demonstrating compliance with the Title V Prevention of Significant Deterioration ("PSD") program.[25]

Texas' Leak Detection and Repair Program

According to the District, Regulation 1.21, *Enhanced Leak Detection and Repair*, is based on a Texas regulation, *Chapter 115-Control of Air Pollution from Volatile Organic Compounds, Subchapter H: Highly Reactive Volatile Organic Compounds, Division 3: Fugitive Emissions*, §§115.780 *et seq.*[26] Under the Texas regulation, enhanced leak detection and repair requirements apply to the following sources:

> any process unit or process within a petroleum refinery; synthetic organic chemical, polymer, resin, or methyl tert-butyl ether manufacturing process; or natural gas/gasoline processing operation in the Houston/Galveston/Brazoria area, as defined in §115.10 of this title (relating to Definitions), in which a highly-reactive volatile organic compound, as defined in §115.10 of this title, is a raw material, intermediate, final product, or in a waste stream is subject to the requirements of this division (relating to Fugitive Emissions) in addition to the applicable requirements of Subchapter D, Division 3 of this chapter

[24] Air Use Permit Technical Manual, Tab 9, p. 22.
[25] *Id.*
[26] PRIA, p. 10.

> (relating to Fugitive Emission Control in Petroleum Refining, Natural Gas/Gasoline Processing, and Petrochemical Processes in Ozone Nonattainment Areas).[27]

The enhanced leak detection and repair requirements apply only to "highly reactive volatile organic compounds," which are defined by reference to a particular county as follows:

> (A) In Harris County, one or more of the following volatile organic compounds (VOCs): 1,3-butadiene; all isomers of butene (e.g., isobutene (2-methylpropene or isobutylene), alpha-butylene (ethylethylene), and beta-butylene (dimethylethylene, including both cis- and trans-isomers)); ethylene; and propylene.
>
> (B) In Brazoria, Chambers, Fort Bend, Galveston, Liberty, Montgomery, and Waller Counties, one or more of the following VOCs: ethylene and propylene.[28]

Certain components are exempted as follows:

> (a) Components that contact a process fluid containing less than 5.0% highly-reactive volatile organic compounds by weight on an annual average basis are exempt from the requirements of this division (relating to Fugitive Emissions), except for §115.786(e) and (f) of this title (relating to Recordkeeping Requirements).
>
> (b) The following are exempt from the shaft sealing system requirements of §115.783(3) of this title (relating to Equipment Standards):
>
> (1) submerged pumps or sealless pumps (e.g., diaphragm, canned, or magnetic-driven pumps); and
>
> (2) pumps, compressors, and agitators installed before July 1, 2003.
>
> (c) The following components are exempt from the requirements of this provision:
>
> (1) conservation vents or other devices on atmospheric storage tanks that are actuated either by a vacuum or a

[27] Texas Chapter §115.780.
[28] Texas Chapter §115.110.

pressure of no more than 2.5 pounds per square inch gauge (psig);

(2) components in continuous vacuum service;

(3) valves that are not externally regulated (such as in-line check valves);

(4) any site as defined in §122.10 of this title (relating to General Definitions) with less than 250 components in volatile organic compound (VOC) service;

(5) components that are insulated, making them inaccessible to monitoring with a hydrocarbon gas analyzer;

(6) sampling connection systems, as defined in 40 Code of Federal Regulations (CFR) §63.161 (January 17, 1997), that meet the requirements of 40 CFR §63.166(a) and (b) (June 20, 1996); and

(7) instrumentation systems, as defined in 40 CFR §63.161 (January 17, 1997), that meet the requirements of 40 CFR §63.169 (June 20, 1996).

(d) All pumps, compressors, and agitators that are equipped with a shaft sealing system that prevents or detects emissions of VOC from the seal are exempt from the monitoring requirement of §115.781(b) and (c) of this title (relating to General Monitoring and Inspection Requirements). These seal systems may include, but are not limited to, dual seals with barrier fluid at higher pressure than process pressure, seals degassing to vent control systems kept in good working order, or seals equipped with an automatic seal failure detection and alarm system. Submerged pumps or sealless pumps (including, but not limited to, diaphragm, canned, or magnetic driven pumps) may be used to satisfy the requirements of this subsection.

(e) Each pressure relief valve equipped with an upstream rupture disk is exempt from the requirements of §115.781(b)(8) of this title, provided that the pressure relief valve complies with §115.725(c) of this title (relating to Monitoring and Testing Requirements). The rupture disk must be replaced as soon as practicable, but no later than 30 calendar days after a failure is detected.

(f) The following valves are exempt from the requirements of §115.783(5) of this title:

(1) pressure relief valves;

(2) open-ended valves or lines in an emergency shutdown system that are designed to open automatically in the event of an emissions event;

(3) open-ended valves or lines containing materials that would autocatalytically polymerize or would present an explosion, serious overpressure, or other safety hazard if capped or equipped with a double block and bleed system; and

(4) valves rated greater than 10,000 psig.

(g) Any site as defined in §122.10 of this title with less than 100 components in highly-reactive volatile organic compound service is exempt from §115.788 of this title (relating to Audit Provisions).[29]

The Texas program is narrowly focused on a limited number of clearly defined compounds and components that may leak. The enhanced leak detection and repair program proposed by the District is not similarly focused. First, the enhanced leak detection and repair program proposed by the District applies not only to the 10 facilities currently subject to a federal leak detection and repair program,[30] it may also apply to any facility, where "the District determines the implementation of a leak detection and repair (LDAR) program is appropriate to minimize the likelihood of the occurrence of increased emissions that may become harmful to public health or welfare."[31] It applies to organic and inorganic compounds – a virtually endless number of chemicals.

The District has provided little explanation in the PRIA as to why the Texas program is applicable to Louisville Metro or why it should be applied to such a large number of facilities and expanded to include a virtually endless list of chemicals. Again, the District has selected part, but not all, of the Texas program, and applied it in a different manner without explanation.

The above are only a few notable examples. The air toxic programs discussed above appear to be well researched and well supported by toxicologists and modelers

[29] Texas §115.787.
[30] See Regulation 1.21 Section 1.1.1, which defines facilities currently subject to a federal LDAR program as "affected sources."
[31] Regulation 1.21 Section 1.1.2.

within the context of those regulatory programs.[32] The credibility and "scientific soundness" of these programs is directly related to the implementation of those programs as a whole. Such "scientific soundness" cannot extend to the proposed STAR Program regulation unless the STAR Program is implementing the same provisions in the same way. Because the proposed STAR Program is implemented differently, establishes different standards, and uses different criteria, the District cannot rely on what other programs have done as justification, except in the most general sense, and certainly cannot use those other, different programs to justify the methodology of the STAR Program.

- If the District intends to develop a wholly unique air toxics program, it should do so only after adequate explanation and a fully engaged stakeholder process. The uncertainties identified in the WLATS Risk Assessment Section 6 and the inappropriate use of the *Screening Analysis* demonstrate why the West Jefferson County Community Task Force, West Louisville Air Toxics Study, Risk Management Plan Part 1, Process and Framework (April 2003)(Attached)("Risk Management Plan") should now be implemented by the Board to review the proposed STAR Program and to develop a STAR Program that is reasonable (as required by KRS 77.155(2)), achievable by the regulated entities, and that will result in reductions in air toxics emissions in Louisville that will protect public health. The Risk Management Plan sets forth a reasoned and appropriate plan for the development of an air toxics program that will address the uncertainties and issues identified in the WLATS Risk Assessment and the *Screening Analysis*. More importantly, it is a Plan that has been agreed to by the District, representatives of the community, representatives of environmental groups, industry, and EPA. At this critical juncture, the Plan should not be abandoned by the Board. The STAR Program as proposed by the District and the revisions to the STAR Program proposed by the Task Force will serve to focus the stakeholder process that the Plan calls for, and is more likely to result in development of an air toxics program with strong community consensus, rather than polarizing the community.

[32] See, for example, Michigan's Air Use Permit Technical Manual. Available at www.michigan.gov/deq/0,1607,7-135-3307_3668_4148-98877--,00.html

Comments on the Legality of the STAR Program

- KRS 77.115 provides that the Board "shall manage and control all the affairs and property of the District . . .". The Board is responsible for ensuring that the STAR Program regulations are appropriate and scientifically and technically sound.

- In KRS 77.155(2), the Board has been given the power, "by regulation, to fix **reasonable** limits, by weight or otherwise, for particular air contaminants or other material which in the opinion of said Board may cause or have tendency to cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public" (emphasis added). The Board is responsible for ensuring that the STAR Program regulations are reasonable.

- Pursuant to KRS 224.20-130(2), the District and Board are required to "submit prepared regulations and standards to the [Environmental and Public Protection] Cabinet for prior concurrence." That submittal for prior concurrence has not occurred. Therefore, the Board may not act to adopt the proposed STAR Program until such prior concurrence is received from the Cabinet.

- When the District formally proposed the STAR Program, following the receipt of hundreds of pages of comments on the first draft version of the program made over a several-month period, the Board provided only a 30-day public comment period to the public for the revised proposed regulations. Considering the volume of comments that had already been made, and the uncertainty still prevalent among industry and citizens trying to understand the STAR Program, the 30-day comment period fails to allow a "fair and reasonable opportunity for review and comment . . ." as required by KRS 77.185(2). Despite many pleas by industry to the District staff and Board to extend the comment period, no response was ever given. The 30-day comment period is not adequate to allow the public to:

    - Review, analyze and comment on the changes made by the District to the original draft;

    - Prepare detailed, technical comments on the proposed STAR Program regulations based upon the review and analysis of those regulation, the programs upon which the programs are based, and the information received from technical experts; and

    - Prepare comments on the PRIA, which was not made available for review until January 13.

- In addition to the fact that the original comment period is *de facto* unreasonable, the District has revised one of the regulations without providing proper notice to the public. Sometime following the notice of the formal comment period on the proposed STAR Program regulations, one of the GLI Task Force members was informed by District staff that a revision had been made to Regulation 5.01,

Section 1.6.4. The District staff has created a chart entitled "Benchmark Ambient Concentrations and Associated *De Minimis* Values" and posted it on its website. Below the table is language revising Regulation 5.01. This revision has not been authorized by the Board for formal public comment. The District needs to re-publish notice of the entire STAR Program with the revisions it has placed on its website, and any other changes of which the public has not been provided notice.

- A third element necessary for the Board to adopt any regulation is a finding that the contaminant may cause "injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public." In the past, the Board has typically adopted emission regulations addressing a single pollutant (e.g., benzene), or source type (e.g., boilers). The STAR Program would regulate approximately 200 chemicals and myriad source types. The Board has yet to make a finding that any, let alone each and every one, of these contaminants on the various lists may cause or have a tendency to cause injury, detriment or annoyance to the public. Because the Board has failed to make appropriate findings with respect to the regulated TACs, it will be unnecessarily regulating very minor emissions of pollutants from particular facilities that in no way cause injury or nuisance to the public. It is the Board's obligation to review every chemical on the various lists and make an affirmative determination, based on some scientific basis, that the chemicals that are being regulated meet the standards for regulation established by the statute.

Comments on Regulation 1.02

- The definition of terms in the STAR Program, including but not limited to the definitions in Regulation 1.02 and Regulation 5.01, should be the same as the definitions for those same terms adopted by the Kentucky Division for Air Quality in 401 KAR Chapters 50 through 65. If there is not a corresponding definition for a term in the regulations adopted by the Kentucky Division for Air Quality, then the definition of that term used by EPA in the regulations adopted to implement the provisions of the Clean Air Act should be used. The use of the same definitions for the same terms will avoid confusion, and allow interpretations and guidance related to those terms at the state and federal level to be employed in the implementation of the STAR Program.

- The definition of "ambient air" should be amended to be the same as the state definition in 401 KAR 50:010 Section 1(18).

- The definitions of "cancer", "cancer risk" and "carcinogen" should be amended to be consistent with the Agency for Toxics Substances and Disease Registry (ATSDR) Glossary.

- A definition of "district-only enforceable" should be added based upon Michigan R.339.119(q). The STAR Program is a local program to address local issues and the requirements of the STAR Program should not be federally enforceable.

- The definition of "emissions standard" should be amended to be the same as the current District definition.

- The definition of "excess emission" should be amended to provide that excess emissions are only emissions that exceed an applicable emissions standard. It is arbitrary to determine that emissions that are 125% of a normal rate are excessive, unless there is a demonstration that either the emissions exceed an applicable emissions standard or emissions above that rate pose an actual risk to human health.

- The definition of "malfunction" should be amended to be the same as the state definition in 401 KAR 50:010 Section 1(72).

- Consistent with the comments concerning Regulation 5.20, a definition of "peer review" should be added to define the extent of peer review necessary to establish that scientific evidence or data is credible. It is recommended that the definition "peer review" be taken from *Peer Review in the Department of Energy-Office of Science and Technology: Interim Report* (1997), Commission on Geosciences, Environment and Resources, and defined to mean:

  > an in-depth critique of assumptions, calculations, extrapolations, alternate interpretations, methodology, and acceptance criteria

employed, and of conclusions drawn in the original project being reviewed by independent reviewers who are experts in the technical issues relevant to the projects under review.

- The definition of "process" should be amended to provide that the use of material is not a process. It is the method in which the material is used in a process that gives rise to the potential for emissions of toxic air contaminants. For example, use of a material in a closed looped process that could not result in emissions should not be a process regulated under the STAR Program.

Comments on Regulation 1.06

- Section 3 should be amended to provide that the collection of the new data required by this regulation shall commence 180 days after the effective date of the regulation. This is necessary to provide sufficient time for facilities to train employees in the collection of the new data, arrange for systems to collect and report the new data, and to make any necessary arrangements with contractors.

- The monitoring, recordkeeping, and reporting requirements of Regulation 1.06 Sections 3 and 5 should be amended so that they do not apply retroactively to Title V facilities. As currently drafted, this section requires Title V facilities to collect data for a time period prior to the effective date of the regulation. This is a retroactive application of the regulation that is contrary to KRS 446.080(3).

- In its response to informal comments regarding the Section 5.2.1.1.1 requirement to report CY 2004 data, the District has stated simply that "[t]he District, for several reasons, considered that the Title V companies are already tracking much of this information." The District expands upon this belief by suggesting that data already reported in TRI reports and in the existing emission inventory system "is likely to be calculated by summing the (data from) individual emission points." This response reveals the District's lack of understanding of material and data management practices.

    - Detailed hourly material usage data simply does not exist for many manufacturing processes. More often than not, operational data is not tracked at the detailed hourly level and then subsequently summed into annual or plant-wide totals; rather, emissions data is often back-calculated using widely recognized, commonly employed, and District-approved mass balance methodologies. That is, the volatile portion of the amount of chemical used by a process over a given time period (monthly, quarterly, annually) is conservatively presumed to be completely released to the air and is reported as such.

    - For example, facility purchase records are often able to track the amount of each product brought onsite, and it is conservatively presumed that all materials purchased in a given time period are used (and associated potential emissions released) during that same time period. In other cases, material crib departments might track the withdrawal of certain products from the crib inventory, therefore, usage information is only as detailed as the (in)frequency of product movement to the operating floor; crib withdrawals are generally not regular, and the time period between withdrawals for certain chemicals may be weeks or months.

- If more detailed data is sought by the District, facilities must be given the time to develop appropriate record keeping protocols. Actual CY 2004 data will not be available for all processes at all Title V facilities.

- While the Task Force recognizes the District's interests in implementing a program to address the air toxics concerns as soon as possible, the actual implementation schedule proposed in Section 5.2.2 must be reasonable and take into account the limitations of existing data. Retroactive record keeping requirements simply are not realistic. Accordingly, the dates for compliance in Section 5.2 should be extended to allow adequate time for entities to comply.

- Alternately, if the District believes that the data that Title V facilities are required by Sections 3 and 5 of Regulation 1.06 to collect prior to the effective date of this regulation is already required to be and is being collected, then there are existing regulatory provisions that provide for the collection of the data, and a new regulation is not necessary.

- Section 5 of Regulation 1.06 should be deleted to eliminate all references to "uncontrolled emissions." It is unnecessary to address uncontrolled emissions when the purpose of the STAR Program is to further reduce already controlled emissions. Since all modeling is to be performed on actual emission rates, any such use of uncontrolled emission rates would seem to only heighten fears and anxieties for no justifiable cause.

- If the District's intent by including the Section 5.2.3.3 and Section 5.4 requirements for reporting uncontrolled emissions is to identify the potential impact of any catastrophic release, this purpose is already met by the Clean Air Act Section 112(r) risk management plan requirements for facilities that do manufacture, process, use, store or otherwise handle certain flammable and toxic substances. Reporting of all potentially uncontrolled TAC emissions within the context of the STAR program will not yield any new, meaningful or useful information beyond that already reported within the framework of the Section 112(r) program. Therefore, these requirements to report uncontrolled emissions should be deleted from Regulation 1.06.

- To the extent that the STAR Program is concerned about capturing emissions data from releases, Section 3.1 of Regulation 1.06 already requires reporting of such actual data, and proposed STAR regulations 1.07 and 1.20 also address the potential for excess emissions through the increased requirements for start-ups, shutdowns and malfunctions.

- The detailed stack and fugitive emission release parameters listed in Section 5.3 are necessary for running only the most complex dispersion models. For facilities where emissions may demonstrate compliance with the proposed EALs by use of the Tier 1 or 2 (or even Tier 3) procedures of Regulation 5.22, these reporting requirements only cause additional administrative burden. Accordingly, the requirement to compile

such information should be limited to those parameters employed in the facility's own compliance demonstration.

- Section 5.6 should be deleted. The District should not require an accelerated schedule for the submittal of data, since it is not reasonable. All facilities should be kept on the same schedule for submittal of the required data.

Comment on Regulation 1.07

- The District should provide that the requirements of Regulation 1.07 do not become effective and apply until 180 days after the regulation is adopted by the Board and notice of the effectiveness of the regulation is published in the newspaper. The facilities that will be subject to the new requirements of Regulation 1.07 will need time to provide for training of their employees in the new requirements, because there will be changes in both the time and manner of reporting. In addition, facilities that will be subject to the new requirements will need time to provide for the necessary personnel, systems to implement the requirements, and to arrange for contractors.

- Regulation 1.07 should be amended to delete any provision requiring that "consistent with safe operating procedures" an owner or operators required to stop input feed to the process or process equipment, and shutdown the process or process equipment if excess emissions would likely result from a malfunction. These provisions should be removed: (i) to clarify that alternate emission limits, such as those established in Regulation 6.07 Section 3.3.2 and Regulation 7.067 Section 4.2 apply during start-up and shutdown events; and (ii) to remove the requirement that an owner operator is required to stop input to the process or process equipment or to shutdown the process or process equipment if excess emissions would likely result from a malfunction, since such a blanket requirement may not be appropriate in all situations. As noted by the District in its response to the Informal Comments, "it is the responsibility of a company to comply with the applicable requirements, including emissions standards. *The decision to shutdown a process or process equipment rests with the company, not the District*." See Response to Comment 1.07-23 (*emphasis added*).

- The provision specifying that electronic mail notification would be deemed received by the date and time received by the District should be deleted. This provision should be revised to be consistent with the District's intent as specified in Response to Comment 1.07-34, in which the District states that electronic notification is deemed received by "the date and time identified as sent" rather than as received by the District.

- A provision should be added to require that the "appropriate operating procedures be followed." Not every operating procedure is appropriate or applicable to every start-up or shutdown situation. Process equipment design, pollution prevention measures should be considered as part of the "reasonable, available and practicable emission reduction measures," however, they are not substitutes for allowing the appropriate operating procedures.

- A provision should be added requiring the frequency of operation in start-up/shutdown mode and bypasses to prevent loss of life, property damage, etc. to "be minimized to the extent practicable." Delete all provisions requiring start-up/shutdowns to be minimized to the "maximum" necessary and allowing a

bypass only if "reduced as much as necessary to minimize excess emissions." Allowing bypasses only "as much as necessary to reduce excess emission" and limiting the frequency of "start-up/shutdowns" to the "maximum" extent practicable may require a company to take actions or operate in a manner that is contrary to the equipment manufacturer's guidelines.

- Amend the provision allowing a call to be placed to 911 to be "within 1 hour or as soon as reasonably possible." Allowing a call to be placed to 911 during a true emergency allows facility personnel to concentrate on minimizing the impact of the event, not on making duplicative phone calls.

- Delete the requirement to explain how each provision of Section 4.4 was met and the requirement to provide an "analysis" of what caused the malfunction and the steps to be taken to prevent or minimize similar occurrences in the future. These provisions should be clarified to reduce redundancy and to require only 1 report indicating the cause of malfunction and the steps that will be taken to prevent or minimize similar occurrences in the future.

- The District has revised Regulation 1.07, Excess Emissions from Startups, Shutdowns and Malfunctions on the basis that the current regulation "provides an automatic exemption from being deemed a violation if certain reporting requirements are met" and is, therefore, inconsistent with EPA's Policy on Excess Emissions During Malfunctions, Startup, and Shutdown. [33] EPA's policy regulates emissions of hazardous air pollutants ("HAPs"), including those contained in volatile organic compounds or particulate matter. The toxic air contaminants regulated under the proposed STAR Program include those listed by U.S. EPA as HAPs.

  In accordance with its understanding of U.S. EPA's policies, the District has revised the current regulation to

  - delete provisions providing for emergencies, an affirmative defense;
  - deem excess emissions violations without due process notice;
  - define "malfunctions" without regard to sudden or unavoidable breakdowns and "excess emissions" by a specific emission rate and
  - require numerous reports with prescriptive detail.

- **Deletion of Affirmative Defense**

  Under EPA's Policy, "automatic exemptions" means "a generally applicable provision in a SIP that would provide that if certain conditions

[33] PRIA, p. 7.

existed during a period of excess emissions, then those exceedances would not be considered violations."[34] As a result, all periods of excess emissions are considered violations by EPA.[35] But EPA's September 20, 1999 Policy also states the following:

> - The imposition of a penalty for excess emissions during malfunctions caused by circumstances entirely beyond the control of the owner or operator may not be appropriate.
>
> -States may, therefore, as an exercise of their inherent enforcement discretion, choose not to penalize a source that has produced excess emissions under such circumstances.
>
> - If approved into a SIP, an affirmative defenses would be available to sources in an enforcement action seeking penalties brought by the state, EPA or citizens.[36]

Affirmative defenses are not prohibited by EPA Policy. Therefore, consistent with EPA policy, Regulation 1.07 should be revise to include a provision by which a source may assert an affirmative defense in the proposed STAR Program regulations.

- **Due Process Violations**

According to EPA's February 15, 1983 Policy, "[a]ny malfunction provision must provide for the commencement of a proceeding to notify the source of its violation and to determine whether enforcement action should be undertaken for any period of excess emissions."[37] Notice of the finding of a violation and the opportunity to defend against such a finding is a basic tenet of due process. The District's proposed regulation does not provide a process by which a source is notified of its violation or by which the District may determine whether an enforcement action should be undertaken. Instead, it only provides guidance by which civil penalties may be imposed, a violation being a foregone conclusion..[38] The decision whether to impose civil penalties – or not – is not the same as determining whether an enforcement action should be taken in the first place. Nothing

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[34] Policy on Excess Emissions During Malfunctions, Startup, and Shutdown, September 20, 1999. (Attachment).
[35] *Id.*
[36] *Id.* at pp. 1-2.
[37] Policy on Excess Emissions During Startup, Shutdown, Maintenance, and Malfunctions, February 15, 1983, p. 2.
[38] Proposed Regulation 1.07 Section 2.3.

in EPA's Policies require that the District abdicate its enforcement discretion or violate due process.

- **Distinctions between "malfunctions" and "excess emissions"**

  As currently defined by EPA and previously defined by the District, "malfunction" means "a sudden and unavoidable breakdown of process or control equipment."[39]

  Under the proposed STAR Program, the District has revised the definition of "malfunction" to mean "the failure of air pollution control equipment or process equipment or of a process to operate in a normal or usual manner that causes, or is likely to cause, emissions that exceed an applicable emission standard."[40] As a result, all startups and shutdown events are, by definition, "malfunctions," not just those resulting from the sudden and unavoidable breakdown of process or process control equipment. This definition is clearly contrary to the definitions used by EPA to regulate sources. As a result, the District's definition should be changed to be consistent with that used by EPA[41]

  The District has also revised the definition for "excess emissions" to include a secondary standard by which a source may determine whether excess emissions occurred if there is not an applicable emission standard for a toxic air contaminant established pursuant to Regulation 5.21 *Environmental Acceptability for Toxic Air Contaminants,* as follows.

  > "for the purpose of the notification and reporting requirements of Regulation 1.07 Excess Emissions During Startups, Shutdowns, and Malfunctions, excess emissions shall also mean emissions that exceed 125% of the reported actual maximum hourly emission rate of a toxic air contaminant that results from a startup, shutdown, or malfunction.[42]

  Based on our current understanding of the proposed STAR Program, and EPA's Policies, it appears that the secondary standard proposed in Regulation 1.02 §1.30 may, in certain circumstances, violate U.S. EPA's policy on excess emissions during startups and shutdown. such secondary standards are automatic exemptions and thus prohibited.[43]

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[39] Regulation 1.07 Section 1.2.
[40] Proposed Regulation 1.02 Section 1.41.
[41] Policy on Excess Emissions During Startup, Shutdown, Maintenance, and Malfunctions, February 15, 1983, p. 1.
[42] Proposed Regulation 1.02 Section 1.30.
[43] See, generally, Policies on Excess Emissions During Startup, Shutdown, Maintenance, and Malfunctions, September 28, 1982, February 15, 1983, and September 20, 1999; see also Memorandum, Automatic or

Because the District's definitions for malfunction and excess emissions appear to contradict U.S. EPA policy, the definitions should be amended to be consistent with the relevant EPA policies.

Blanket Exemptions for Excess Emissions During Startups and Shutdowns Under PSD. Available at www.epa.gov/ttn/nsr/gen/u3-14.pdf.

Comments on Regulation 1.20

- The definition of "affected facility" in Section 1.1.2 should be amended to apply only when the District determines that a malfunction has occurred. That a malfunction "may have occurred" is not sufficient justification to subject a facility to a malfunction prevention program requirement.

- Regulation 1.20 should be amended to add a self-terminating provision in Section 3.1 for a process or process equipment that has not met the definition of "affected facility" in Section 1 for 3 years following the requirement to develop a malfunction prevention program. If that process or process equipment complies for 3 years, the owner operator should be allowed to remove the process or process equipment from the program.

- Sections 3.1.3 through 3.1.5 should be amended to specify that the maximum intervals for routine inspection and calibration are those recommended by the manufacturer, unless a longer period is specifically identified and approved by the District in the malfunction prevention program.

- The provisions in Sections 3.1.8 and 3.1.9 requiring the description of any additional air pollution control equipment to be installed and operational changes to be implemented should be deleted. The purpose of the program is to prevent malfunctions. Specific air pollution control equipment and operational changes may not be capable of being determined until after a malfunction has occurred. Once a malfunction has occurred, it may be possible to identify specific air pollution control equipment or operational changes that can be used to address the actual malfunction.

- Revise the provisions in Sections 3.3 and 3.4 to provide that implementation of the initial plan and any subsequently revised plan shall commence within 60 days of receiving notice from the District that a plan has been approved. A reasonable time period following approval of the plan by the District should be allowed for implementation, so that necessary arrangements for the training of personnel, obtaining any necessary new personnel, and arranging contracts with vendors can be made.

- The reference to including OSHA or other program requirements as part of the malfunction prevention program should be deleted, since such a requirement may cause conflict with the OSHA requirements.

Comments on Regulation 1.21

- The District should provide that the requirements of Regulation 1.21 for the enhanced LDAR Program do not become effective and do not apply until at lease 180 days after Regulation 1.21 is adopted by the Board and notice of the effectiveness of the regulation is published in the newspaper. The facilities affected by Regulation 1.21 will need time to train employees in the requirements of the new LDAR Program, including setting up the necessary systems to provide for record keeping and reporting, to arrange for necessary personnel to implement the new requirements, and to reach agreements with contractors for implementation of the new requirements.

- In the response to informal comments, the District has indicated it used the Texas Air Quality Study, and the Highly Reactive Volatile Organic Compound (HRVOC) LDAR program developed as a work product of the Texas Air Quality Study, as a justification for the enhanced leak detection and repair regulation. However, the District has failed to take into account some significant differences between the industries that participated in the Texas study and the affected facilities located in Jefferson County. The Texas Natural Resource Conservation Commission (TNRCC, now known as the Texas Commission on Environmental Quality, or TCEQ) conducted the study to address extensive problems with attainment of the 1-hour ozone standard in the Houston-Galveston severe non-attainment area. TNRCC joined the National Aeronautical and Space Administration (NASA) in fly-over studies of the Houston Ship Channel, the most industrialized local area in the United States, to identify specific contributors to the Houston area ozone loading into the airshed. TNRCC and NASA identified four compounds that disproportionately contributed to ozone formation over the Houston Ship Channel: ethylene, butylenes, propylenes, and 1,3-butadiene. With the exception of 1,3-butadiene, none of the HRVOC chemicals even appear on any of the proposed STAR Program categories of toxic air contaminants.

  Once these compounds were identified, TNRCC identified two facilities emitting substantial amounts of these chemicals, now known as HRVOC chemicals, to study in preparation for the January 2004 rulemaking. The Texas facilities were both olefin facilities which operate large pipelines at throughputs of 450,000 to 600,000 lbs/hour for each process unit. A fugitive leak at these types of facilities is significant because even the tiniest leak will emit large quantities of HRVOC material. Leaks at these facilities, as well as the numerous refineries and other large petrochemical facilities emitting HRVOCs, merit additional scrutiny. By comparison, the throughput of all of the facilities in Jefferson County that are currently subject to a federal leak detection and repair program do not add up to the throughput of just one olefin facility each day.

  In addition, the olefin units predominantly process gasses, while the Louisville facilities process a combination of liquids and gasses. So, the impacts of a leak in Louisville are not significant because of limited throughput, lower vapor pressures, and vastly different chemistry being conducted by chemical plants in Jefferson

County than the refineries in the Houston Ship Channel. Even TCEQ recognizes the differences between this isolated case and the LDAR programs required of non-HRVOC facilities and HRVOC facilities located in areas that are not severe non-attainment areas under the 1-hour ozone standard. the District has not conducted or published for public comment any analysis describing why the enhanced LDAR program is necessary in the very different Jefferson County airshed. If the District wants a model for an appropriate LDAR program based on the Texas regulatory structure, it should use the 28VHP program, not the very-limited-case HRVOC program. Other LDAR programs exist around the United States that may serve as more appropriate models, such as Michigan's R336.1628. Use of the Texas HRVOC program for non-HROVC chemicals in the United States is unprecedented, unjustified, and inappropriate.

- The District has provided no opportunity for local discussion or analysis of the cited June 2003 Texas Air Quality Study for the Houston Area prepared by the Texas Natural Resources Conservation Commission (TNRCC).
- The enhanced leak detection and repair requirements should only apply to major HAP and VOC sources, and should not establish requirements that exceed the federal LDAR program by applying LDAR to non-major facilities. The District has provided no support for expanding the program to non-major sources in either the Preliminary Regulatory Impact Assessment or its response to the informal comments. There has been no opportunity for public discussion on the issue of whether the enhanced LDAR program should be expanded to non-major sources.
- Affected sources should be allowed to incorporate applicable portions of the federal LDAR requirements to which they are subject into the District LDAR plans by reference.
- The processes that are already subject to a 40 CFR Part 60, 61 or 63 LDAR program do not have identical requirements. The various federal LDAR programs have been developed over the years to address particular industries. They are not one size fits all. Examples of areas with differences between the federal programs are written plan requirements; leak identification removal; calibration gas; schedule for monitoring skip periods; valve, pump, connector, agitator, pressure relief device, instrumentation system, compressor, sampling connection system, product accumulator vessels and control device requirements; and various alternative means.
- Overlaying the HON, 40 CFR Part 63 Subpart H, on source categories for which it was not intended results in the elimination of certain exemptions from the LDAR Program that are incorporated into the federal program. Those exemptions from the federal program were based upon carefully review, as discussed and addressed in the preamble to the federal regulations. Streamlining will not fix this problem, since the most stringent requirement must be chosen. However, eliminating source category specific exemptions will have little value in reducing TAC emissions, since the reason the exemptions exist in the first place is because there are minimal emissions associated with the exempted process or process equipment.

- Regulation 1.21 should be revised to incorporate the affected facility-specific federal LDAR program, rather than generically applying the HON, 40 CFR Part 63 Subpart H. This is necessary because the federal LDAR programs are process and organic hazardous air pollutant specific regulations based upon the chemical, concentration, hours of operations and other requirements. Compliance requirements are targeted to components that are capable of emitting significant quantities of organic hazardous pollutants. As proposed by the District, the enhanced LDAR program does not adequately define the scope of the program as it applies to processes or chemicals used at affected sources. As a result, the District's program could conceivably apply to equipment within covered processes that have minimal hours of operation or dilute concentrations of organic hazardous air pollutants even though emissions from such equipment are insignificant.

- The District has misinterpreted the informal comment that "[t]here's a much higher likelihood for compliance to be achieved by simply adjusting (lowering) the leak definitions within the existing applicable federal LDAR programs." The intent is to suggest applying the lowered leak definitions to the existing applicable federal LDAR program instead of applying the lowered leak definition and requiring all facilities use the HON program for LDAR. However, it was never the intent of the informal comment to suggest elimination of all of the additional enhanced requirements of the proposed regulation in favor of only applying the lowered leak definition to the existing program.

  The District asserts that not all LDAR programs are the same, which is true. However, the revisions proposed by the Task Force will eliminate the major differences in the various LDAR programs, and thus support the desired emission reduction without requiring every company to standardize to one LDAR program.

  The District's insistence on applying the HON program as a standard for all facilities appears to be intended to reduce the District's workload at the expense of the affected facilities. Even with streamlining, the various facilities will still have differing LDAR requirements and the apparent convenience to District inspectors will be lost.

- Many facilities in Jefferson County are in the process of implementing LDAR programs for the 10-year MACT standards, including 40 CFR 63 Subpart TT/UU programs under the Miscellaneous Organic NESHAP, 40 CFR 63 Subpart FFFF. EPA has recognized that Subpart UU is equivalent to Subpart H (as well as 40 CFR 65 Subpart F, the Consolidated Air Rule). The District should develop amend the regulation to provide that Subpart H, UU, or 40 CFR 65 Subpart F are equivalent to Subpart H.

- The PRIA suggests facilities will need to add 5 Full Time Equivalents [FTEs] to come into compliance with the HON requirements of the proposed regulation. At current industry rates for appropriately qualified employees, this is an estimated cost of $475,000 per year, including benefits. The Task Force estimates that four of the five FTEs will be at facilities with continuously monitored emissions, which means these facilities identify leaks at the time of occurrence. Consequently, these facilities have very low quantities of fugitive emissions, significantly less than a ton. For these

affected facilities, the cost to implement Regulation 1.21 is approximately $40,000,000 to $440,000,000 per ton. It is presented on a $/ton basis for comparison with alternative methods of emission reduction. (See Attachment for the calculations.) The District has failed to estimate a cost per ton for emissions reductions resulting from this proposed regulation. Therefore, the District has not evaluated the benefit of reducing emissions against the cost of implementation to justify the program. The high cost of LDAR implementation as required by the proposed regulations does not justify the minimal emission reductions.

- As proposed by the District, it is not clear whether the purpose of the third-party audit program is to verify the facility's leak rate or determine if leaking components have been repaired. The presence or absence of equipment leaks is not a violation of any applicable requirement, since all LDAR programs allow leaks, so long as the repairs are conducted as required under the underlying applicable requirement. If the purpose is to verify the leak rate, then the monitoring required is in vain. Repairs made to leaking equipment will change the leak rate measured and no verification will be forthcoming. If the intent is to determine if leaking equipment has been repaired, then only equipment that has leaked should be considered for monitoring. Please remove the monitoring section altogether. The resulting program will still demonstrate that the monitoring performed by the affected facility is comprehensive and complete, much like auditing requirements imposed by the Sarbanes Oxley Act. The District has not attempted to justify the costs of the proposed audit program, and lack of benefits to the community, in the preliminary regulatory impact assessment.

  Furthermore, affected facilities using continuous monitoring of the ambient environment with an alarm system to detect leaks should not be subject to the third-party audit provisions of Section 12. Monitoring systems of this type detect all leaks without regard to the type of component, the accessibility of the components location, or whether the component appears on an equipment list. The monitoring system will continue to detect leaks and sound an alarm until the leaks are repaired, regardless of whether a paper tag has been placed on the component. Most importantly, continuous monitoring systems by their nature work around the clock, providing a substantially higher frequency and percentage of monitoring than a third-party consultant's biannual visit. Again referring to the Attachment, the cost per ton of the audit alone is $4,000,000 to $40,000,000 per ton for no significant environmental benefit. Therefore, the audit program cannot be justified for affected facilities using continuous monitoring of the ambient environment with an alarm system to detect leaks. The suggested text for this revision is:

  12.7 Affected facilities using continuous monitoring of the ambient environment with an alarm system to detect leaks in §3.9 are exempt from the provisions of Section 12.

- Sections 3, 4, 5, and 12: The chemical applicability of the regulation has still not been adequately defined. The unintended consequence of using the term "organic compound" in Regulation 1.21 does not specifically state it applies only to the same regulated substances as the 40 CFR Part 60, 61, or 63 requirements apply. As currently phrased, "organic compound" can be construed to expand the District's

LDAR program to all organic compounds, not just the hazardous air pollutant(s) that trigger the federal LDAR program. This needs to be corrected.

- Regulation 1.21 should be revised to delete provisions, such as Sections 1.6, 3.1 and 5.3, relating to water sealed controlled and process drains, which were taken in part, but not in total, from the Texas Program. Incorporating only a portion of a regulation from another program is inappropriate and unreasonable, since it may leave out important considerations upon which the original program is based. For example, provisions related to the applicability of the Texas regulation to specific systems, concentrations and components are not included in proposed Regulation 1.21.

- Section 3 – If various types of equipment, such as connectors, agitators, and sampling connection systems, are already covered in a federal LDAR program, then they should not be included in the District program in Section 3.1 or in the accounting of leakers in Section 3.2. Including these equipment types in both the federal leak calculation and the District leak calculation is misleading.

- The District has added several subclasses of equipment that are already covered in the various LDAR programs. The following equipment are already considered in the connector category: blind flange, heat exchanger head, bolted manway, and hatch, as well as the connections for a sight glass, meter, and gauge. These do not need to be singled out.

- Section 3.8 - What are the criteria for requiring more frequent monitoring? Without discrete criteria in the STAR Program, the District could arbitrarily request compliance with the regulation with no justifiable applicability determination, and without the criteria for the decision ever being subject to notice and comment rulemaking. Under the proposed STAR Program regulation, it is not clear if the requirement to initiate an LDAR program, under unwritten applicability, can be appealed as a final agency action. This condition constitutes an unconstitutionally vague provision that cannot withstand judicial scrutiny. Subpart H includes a Quality Improvement Program to document when more frequent monitoring is required. The District should adopt this provision as the sole criteria for requiring more frequent monitoring.

- Section 3.9 – The Task Force supports the option to use a continuous leak monitoring system in lieu of a more prescriptive leak detection program. This would provide added flexibility in achieving the same results. Since EPA was so supportive of this method of leak detection, area monitoring should be made an alternative that does not require District approval.

  The District should amend the language in Regulation 1.21 Section 3.9 to read:

  > Federal leak detection and monitoring programs that utilize continuous monitoring of the ambient environment with an alarm system shall be accepted as an equivalent alternative to the requirements listed in sections 3.1 to 3.7. The owner or operator of an affected facility that is not federally required to use continuous monitoring of leaks with an alarm system may propose to the District for approval a leak monitoring program that uses continuous monitoring of leaks

with an alarm system that may be used to replace the monitoring requirement of sections 3.1 to 3.7.

- Section 4 – The District has misinterpreted the informal comment "[n]eed to define how you deal with a leak that has been reduced from >10,000 ppm to <10,000 ppm (although not stopped yet) through extraordinary efforts. It should revert to 'regular' repair from 'fast track' repair schedule." In the District's response to informal comment 1.21-27, it is stated a "significant leak that received only a partial repair may degrade again to the level of a significant leak." While this is an appropriate statement, it is applied inappropriately. The District appears to believe the hypothetical partially repaired component in the comment would never be repaired. That is incorrect. All that is being suggested is that the partially repaired component then be repaired on the same schedule as components that never leaked above 10,000 ppm. A new section 4.2.1.3 has been proposed in the Task Force's proposed revision to this regulation to address this situation.
- Section 4.1 - A first attempt to repair is not always possible within one business day of detecting a leak. For example, construction of scaffolding, and employing and staging contractors may take more than one day. Efforts to make such repairs may be undertaken within one day. In these situations where the component is probably already listed as difficult-to-repair or nonaccessible, the time period for first attempt at repair should be three days.
- Section 5.2 - Shaft sealing systems should only be required of equipment meeting the minimum service criteria of the applicable federal LDAR regulation: 5% OHAP service [Subpart H], 10% VHAP service [Subpart V], etc… . In the District's response to informal comments the intent to enhance the federal LDAR requirements is stated. However, there is little value in requiring expensive equipment alterations for equipment that is not considered regulated by the applicable federal rule because its contents are so dilute. Leaks from equipment in dilute service are insignificant in their total mass of emissions. In some cases, the material's solubility is lower than the service requirement and no emissions would be expected. Therefore, requiring shaft sealing systems for equipment in dilute chemical service is not a cost effective use of limited capital resources. In addition, if the leaks from such a shaft system are significant enough to require controls beyond frequent monitoring, closed vent conveyance to a control device must be included as a control option in lieu of shaft sealing systems. The District should refer to 40 CFR 63 Subpart SS for closed vent requirements when closed vent conveyance is used for LDAR components requiring emissions controls.
- Section 9 - The "minor modifications" already considered within EPA Method 21 (such as different calibration gas) should not require District approval. In the response to informal comments, the District concurred in 1.21-43. However, the requirement for District approval remains in the regulation for changes in calibration gases. Again, this should be removed since EPA Method 21 already requires appropriate demonstration of the adequacy of a change.
- Section 14: The District has not fully clarified the applicability of Section 14 for inorganic LDAR, although the District's response to informal comments 1.21-55

better defines the intent. As it stands, the current phraseology still has the unintended consequence of subjecting to the District's inorganic LDAR program all inorganic TACs present at affected facilities with federal *organic* LDAR programs. This is clearly not the District's intent since the response to informal comments states "[o]ther than the 'HCL MACT,' there is no other required LDAR program that addresses leaks of inorganic compounds. Thus, no other process unit would be defined as an affected facility pursuant to section 1.1.1." The statement added to Section 2 of the regulation does not correct this unintended consequence.

- The HCL MACT only requires that the facility develop a site-specific program, which is expected to consist of audio, visual and olfactory monitoring, and is not intended to require instrument monitoring systems that do not exist. The District should consider citing the appropriate sections of 40 CFR 63 Subpart NNNNN as the applicable requirement for inorganic leak detection monitoring to alleviate the confusion.

Specific Comments Relative to the Task Force's proposed revisions to Regulation 1.21:

The following table contains descriptions of the revisions to Regulation 1.21 proposed by the GLI Air Toxics Task Force. The comments contained in the Regulatory Change column are a summary of the specific suggested language changes found in the draft revised regulation, which is included with these comments.

Section	Regulatory Change	Rationale
§1	Add a provision to include definitions in the referencing subpart as defined in Section 1.1.1.	Provide reference for terminology used.
§1.1.1	Add a definition for the "referencing subpart" in 40 CFR Part 60, 61 or 63, except for 40 CFR Part 63 Subpart M *National Perchloroethylene Air Emission Standards for Dry Cleaning Facilities*.	Adding the definition of "referencing subpart" allows it to be used later in the regulation, where it is appropriate to refer to the original LDAR program that caused a facility to become subject to Regulation 1.21.
§1.3	Add a definition for "District-origin components."	"District-origin components" are the extra equipment, subject to Regulation 1.21, that are not found in the original LDAR program that caused a facility to become subject to Regulation 1.21. Adding the definition allows it to be used later in the regulation as a short hand for the particular equipment to which it refers.
§1.5	Add a definition for "light liquid."	This is the federal criteria for defining a light liquid, found in many MACT standards.

§1.6	Add a definition for "heavy liquid."	This is the federal criteria for defining a heavy liquid, found in many MACT standards.
§1.7-1.7.9	Revise the definition of "leak" for a valve, connector, pump handling polymerizing monomers, pump in food/medical service, all other pumps, pressure relief valves, agitators, instrumentations systems, and compressors.	The leak definitions proposed are equal to 50% of the HON leak values. These meet the District's goal of being more stringent than the federal rules and potentially reducing emissions, while being reasonable levels for facility action. Also, new definitions for leaks should be added to reflect the federal rules' recognition that pumps in different services have specific leak definitions for valid reasons. There is no distinction made for service for all components - i.e., light liquid service, gas/vapor service, heavy liquid service, reactive monomer service, and food/medical service. This should be made consistent with the MACT LDAR programs, particularly with respect to pumps.
§1.6	Delete the provision related to "water seal control."	Provisions relating to water seal controls and process drains were taken by the District in part, but not in total, from Texas regulations. Incorporating a portion of a regulation is inappropriate. The provision was used out of context with the rest of the Texas regulation, which included limitations on the applicability of the requirement based on concentration and flow rate of the regulated wastewater.

§2.1 – 2.4	Revise the provision to clarify that the regulation applies to any affected facility to the same extent that the referencing subpart applies to the affected facility. Add provisions clarifying the scope of the applicable subpart and that the provisions of Regulation 1.21, including the service requirements, do not apply to process units with a referencing subpart unless the process unit that uses the specific hazardous air pollutant listed in the referencing subpart is used at or above the concentration for which the referencing subpart applies.	In response to informal comments 1.21-3, the District stated its intent more clearly than in the actual proposed regulation, with regard to preserving the applicabilities of the original federal LDAR regulations as they apply to Regulation 1.21. The clarifying statements added are designed to codify this interpretation and remove the option of interpretations that are not what the District intended and industry has understood.
§2.5 – 2.6	Add provisions to define the compliance dates for existing and future affected facilities.	This regulation will be effective the day it is adopted. However, changes to a facility's LDAR program cannot happen instantaneously upon the adoption of the regulation. The addition of compliance dates will allow the facility to develop the new additional elements of the enhanced program and work them into their existing program. The proposed change also defines how a facility with a future compliance date for LDAR is expected to comply with the District's program. For example, facilities subject to the MON MACT must be in compliance with the MON MACT LDAR requirements by November 10, 2006. Normally, a new MACT standard allows the facility three years to come into compliance. The proposed provision requires the facility to be in compliance with the LDAR requirements of a new MACT in only two years.

§3	Clarify that the owner and operator are required to monitor the process unit for leaks in accordance with the referencing subpart.	The processes that are already subject to 40 CFR Part 60, 61, or 63 LDAR do not have identical requirements. The various federal leak detection programs have been developed over the years to address particular industries. They are not one size fits all. Examples of areas with differences between the federal programs are written plan requirements; leak identification removal; calibration gas; schedule for monitoring skip periods; valve, pump, connector, agitator, pressure relief device, instrumentation system, compressor, sampling connection system, product accumulator vessels, and control device requirements; and various alternative means. Overlaying the HON on source categories for which it was not intended will negate some germane exemptions found in the appropriate applicable source category LDAR program. Streamlining will not fix this problem, since the most stringent requirement must be chosen. However, eliminating source category specific exemptions will have little value in reducing TAC emissions, since the reason the exemptions exist in the first place is because there are minimal emissions associated with the exempted process/equipment.
§3	Revise the provision by substituting "organic hazardous air pollutants" for the phrase "organic compound".	The unintended consequence of using the term "organic compound" is it does not specifically state the applicability of Regulation 1.21 is for the same regulated substance as the 40 CFR Part 60, 61, or 63 applicability. As currently phrased, "organic compound" can be construed to expand the District's LDAR program to all organic compounds, not just the hazardous air pollutant(s) that trigger the federal LDAR program.

§3.1	Revise the provision by substituting organic hazardous air pollutants in gaseous or light liquid service for the specific components referenced.	Components that are already part of existing LDAR programs should be removed, since they are already sufficiently monitored. Components that had been added by the District from the partial inclusion of the Texas wastewater regulations should be removed, since incorporating a portion of a regulation is inappropriate. The gaseous or light liquid qualifier was added since leaks from heavy liquid systems do not pose significant risk.
§3.2	Add a new section addressing equipment not monitored in all federal LDAR programs.	The components in Section 3.1 that are not found in all LDAR programs should be addressed separately, so they would be monitored within the District's proposed program for the affected facilities that were not already monitoring those equipment types. The equipment in §3.1 and 3.2 may then be referred to as "District origin components", since they are the components added by the District to enhance the program. It is important to separate the components found in the federal LDAR programs from those extra components in the District regulation for recordkeeping purposes, if a company does not choose to go through the streamlining process. It simplifies recordkeeping while still making the LDAR program tougher.
§3.3	Add a provision exempting a new or existing agitator equipped with a shaft sealing system described in Sections 5.2.1.1 – 5.2.1.3 from the monitoring requirements of Section 3.	In the source regulations 30 TAC §115.357 (4), Texas exempts shaft sealing systems from monitoring. Various MACT rules also exempt shaft sealing systems from quantitative monitoring, since the likelihood of leaks is already minimized or eliminated.

§3.4	Add an alternate provision for monitoring District origin components based on the number of leaking components instead of only the leak rate.	Affected facilities with few components may not be able to apply the different leak percentages and reduce the frequency of monitoring, if the leak percentage equates to a fractional component less than one (*e.g.*, it is not possible to count one quarter of a valve or flange). Therefore, in these instances, the facility needs to be allowed a small number of leaking components to be considered in lieu of the leak rate. Just like the decreasing leak rate percentage proposed by the District, a decreasing number of leaking components should be "rewarded" with less frequent monitoring.
§3.5	Add a provision to exempt from monitoring pressure relief devices in gaseous service that are installed in series with a rupture disk, pin, second relief valve, or other similar leak-tight pressure relief component.	A relief valve that is protected by another leak-tight piece of equipment is not in hazardous air pollutant service and, therefore, cannot leak the material of concern. Since the material is not available to detect, no monitoring is necessary or appropriate. In the Texas program "relief valves equipped with a rupture disc upstream or venting to a control device are not required to be monitored." The unusual condition where the first leak-tight piece of equipment fails is already covered in Section 5.1 by the requirement for a pressure sensor (or equivalent) to detect a leak and the requirement to repair the system in a timely fashion.
§3.6.2	Add a provision for recording monitored instrument readings by exception for readings lower than 20 ppm.	This change provides flexibility in recording the results of monitoring. The intent is to provide the option to identify which components were monitored and only provide the exact monitoring value when it is greater than or equal to 20 ppm. Twenty ppm was chosen as an appropriate value since it is well below the leak definitions for all components.

§3.8	Apply the provision in Section 3.8 to affected facilities required to develop an LDAR program after the effective date of the regulation.	This provision should be limited to facilities required to develop an LDAR program after the effective date of the regulation and provide the option to grandfather the existing recordkeeping system for those sources already subject to the provisions.
§3.9	Add a provision to use a federally required system of continuous monitoring of the ambient environment with an alarm system in lieu of §3.1-3.7 without the need for District approval.	The use of a continuous monitoring of the ambient environment with an alarm system allows the affected facility to find and repair leaks well in advance of any scheduled monitoring. As a result fugitive emissions from all component types are minimized. The EPA commented that the District should encourage the use of such systems since, "Leaks are being addressed far more quickly because of the …sampling."
§4.1	Provide an exemption for pressure relief valves and automatic control valves.	Pressure relief valves are required to be repaired and certified before they can be reinstalled. This expertise is often provided by a contractor and the service is not amenable to a one day turn-around. Automatic control valves are very expensive and spares cannot always be justified, since the valves are generally reliable. The time required to receive a new one can be several weeks from the order date. Therefore, it is not always possible to replace them within one day. Depending on the type of valve, attempting to repair them while in service could make the leak worse and should not be considered a viable course of action.
§4.2	Revise the provision to refer to the referencing subpart.	See comment for §2.1-2.4.
§4.3	Revise the provision to clarify pressure relief valves and automatic control valves are exempt from the requirements of Section 4.3.	This appears to be the District's intent; however it was awkwardly worded, which caused confusion. The exemption for pressure relief valves and automatic control valves should be removed from §4.3 and added as its own section as §4.3.4 or §4.4.

§4.3.1	Define "extraordinary efforts" to include the use of a closed-vent system to capture and control a leak by at least 75%.	The source of the District text is the Texas monitoring requirements. This is another case where the difference in throughput between the olefin facilities in Texas and the Louisville facilities is a significant issue. In the olefin facilities in Texas, even 10% of a 10,000+ ppm leak can amount to a large quantity of fugitive emissions, as a result of the high throughputs associated with those types of processes. While in a facility with a relatively low throughput (such as the facilities located in Louisville), 25% of a 10,000+ ppm leak is not significantly greater than the 10% proposed by the District. We have reduced the requirement for control from 90% to 75% to accommodate difficulties in physically connecting a leaking component to a control device. A question has been raised as to whether a new or modified operating permit would be needed in order to accommodate venting a new emission point (the leaking component) to the applicable control device in this requirement, if the control device was not already listed as a control for that component. This would appear to be necessary for Title V facilities at a minimum. However, a facility could not hope to get such a permit in the one day required by the proposed regulation, since there are requirements for a 30-day public comment period and a 45-day EPA review.

§4.3.1.2	Add a provision specifying that a second extraordinary effort attempt is not required if an initial attempt at a repair through extraordinary methods reduces the leak to a level below 10,000 ppmv but does not completely mitigate the leak.	The District has misinterpreted the informal comment, "[n]eed to define how you deal with a leak that has been reduced from >10,000 ppm to <10,000 ppm (although not stopped yet) through extraordinary efforts. It should revert to "regular" repair from "fast track" repair schedule." In the District's response to informal comment 1.21-27, it is stated, "[a] significant leak that received only a partial repair may degrade again to the level of a significant leak." While this is an appropriate statement; it is applied inappropriately. The District appears to believe the hypothetical partially repaired component in the comment would never be repaired. That is incorrect. All that is being suggested is that the partially repaired component be repaired on the same schedule as components that never leaked above 10,000 ppm.
§4.3.3	Replace organic "compound" with "hazardous air pollutant."	See comment for §3.
§4.3.4	Revise the provision to clarify pressure relief valves and automatic control valves are exempt from the requirements of Section 4.3.	This appears to be the District's intent; however it was awkwardly worded, which caused confusion. The exemption for pressure relief valves and automatic control valves should be removed from §4.3 and added as its own section in §4.3.4 or as §4.4.
§4.4	Delete the requirement that a supervisory level person must sign off prior to putting a component on a "delay of repair" list.	The federal LDAR program already requires extensive documentation for "delay of repair" and since, by practical necessity, a facility's staff requirements to implement the very detailed program require more than one person be aware of the decision, another supervisory signature should not be required.
§5	Revise the provision to refer to the referencing subpart.	See comment for §2.1-2.4.

§5.1	Refine the provision to apply to batch operations within 30 calendar days and no later than the next process unit shutdown for continuous operations.	In 30 TAC §115.352(9), Texas grants the repair period on a pressure relieve device be extended to the next process unit shutdown. The facilities covered by that regulation are predominantly continuous processes. The District adopted this concept in §5.8. However since §5.8 is redundant with §5.1, we propose to combine the concepts found in the two requirements and apply them to batch or continuous operations, as appropriate.
§5.2	Extend the deadline for equipping shaft sealing equipment to pumps, compressors, or agitators installed after July 1, 2007.	Extended the timing in keeping with the delay in adoption of the rule. By the time Regulation 1.21 is adopted, this will maintain approximately the same length of time to address these equipment changes as the originally proposed regulation did.
§5.3	Delete all provisions relating to process drains.	Provisions relating to process drains were taken in part, but not in total, from Texas regulations. Incorporating a portion of a regulation is inappropriate. The provision is used out of context with the rest of the Texas regulation, which included limitations on the applicability of the requirement based on concentration and flow rate of the regulated wastewater.
§5.3 - 5.4	Remove "reworked piping" from the requirements of these sections.	Unlike valves, pumps, and compressors, piping doesn't have any parts that can be reworked. The concept makes no sense and should be removed.
§5.8	Delete provision related to pressure relief valves installed in a series with a rupture disk.	The District's §5.8 is redundant with §5.1 and should be removed.
§6.1	Delete the requirement that the owner or operator act as, or assign a person to be, the LDAR coordinator.	It is inappropriate for the District to dictate staffing decisions of a facility. It is up to the company to determine the means and method of complying with a regulation.
§8.1.2	Extend the deadline for equipping shaft sealing equipment to pumps, compressors, or agitators installed after July 1, 2007.	Extend the timing in keeping with the delay in adoption of the regulation.

§8.2.1	Change "continuous vacuum service" to "vacuum service".	The terminology should be consistent with the federal definition. "Vacuum service" is defined in various MACT LDAR programs and is nationally accepted and applied.
§8.2.4	Add an exemption for conservation vents or other devices on atmospheric storage tanks that are actuated either by a vacuum or a pressure of no more than 2.5 pounds per square inch, gauge (psig).	From 30 TAC §115.357 (2). This exemption is needed so normal tank breathing is not considered a leak subject to repair.
§8.2.5 and 8.2.6	Revise the provision to allow compliance with the requirements of the referencing subpart.	See comment for §2.1-2.4.
§11	Revise the provision to be less prescriptive.	The regulation should be changed to provide flexibility. In facilities where dataloggers are not used, minute by minute monitoring information will not be available for analysis.
§11.2 – 11.4	Add provisions for preparing and revising a data review plan submitted to the District.	The revisions should be made to clarify submittal and subsequent revision requirements.
§12.1	Revise the audit provision to "at least once within two years of the effective regulation and every five years thereafter."	It is appropriate to conduct the first audit within the first two years of the program to assure all the required components have been identified and there are no procedural problems with identifying leaking components. Subsequent audits should only be required once per permit term (which is five-years). Established process units do not change substantially from year to year. Verifying the completeness of the established LDAR program once per permit term should be more than sufficient.
§12.1.1.1	Remove the word "tagged".	Equipment identification is required; however, tagging is optional in most, if not all, federal LDAR programs. Therefore, in keeping with this idea, the requirement should be reworded to require the same identification task, but not require tagging as part of the task.

§12.1.2	Remove the requirement to remonitor the process as part of the audit.	As proposed by the District, it is not clear whether the purpose of the audit program is to verify the facility's leak rate or determine if leaking components have been repaired. The presence or absence of equipment leaks is not a violation of any applicable requirement, since all LDAR programs allow leaks, so long as the repairs are conducted as required under the underlying applicable requirement. If the purpose is to verify the leak rate, then the monitoring required is in vain. Repairs made to leaking equipment will change the leak rate measured and no verification will be forthcoming. If the intent is to determine if leaking equipment has been repaired, then only equipment that has leaked should be considered for monitoring. Therefore, we removed the monitoring section altogether. The resulting program will still demonstrate that the monitoring performed by the affected facility is comprehensive and complete, much like auditing requirements imposed by the Sarbanes Oxley Act.
§12.1.2	Revise the provision to be less prescriptive. Replace "previous quarter" with "previous monitoring period".	The regulation should be changed to provide flexibility. In facilities where dataloggers are not used, minute by minute monitoring information will not be available for analysis. Also "previous quarter" should be replaced with "previous monitoring period", since not all monitoring periods are quarterly.
§12.2	Revise the provision to require the owner or operator to maintain records of the audit and make them available to the District upon request instead of submitting a report	Federal programs already require the submission of LDAR program data on a recurring frequency. Therefore it is not necessary to submit it in an audit report. It would be more appropriate for an inspector to review the audit findings during a facility inspection; this provides the inspector an opportunity to ask questions and view components of concern.

§12.3	Add a provision specifying that an audit conducted by the government or its contractor will fulfill the requirements of the independent audit for the associated time period.	Governmental agencies and, generally, their contractors qualify as third parties. Therefore, they are as qualified to perform the audit as any facility-hired consultant. This concept is covered in §115.788(f) of the Texas requirements.
§12.4	Remove the reporting requirement.	This is in keeping with the change in §12.2, above.
§12.6	Delete the provision by which the District may approve an audit once every three years after two consecutive audits show a high level of compliance with the audit requirements.	Instead, revise the audit provision to "at least once within two years of the effective regulation and every five years thereafter," in Section 12.1. The District provided no standards by which to determine "high level of compliance."
§12.7	Affected facilities using continuous monitoring of the ambient environment with an alarm system to detect leaks in §3.9 are exempt from the provisions of Section 12.	Monitoring systems of this type detect all leaks without regard to the type of component, the accessibility of the components location, or whether the component appears on an equipment list. The monitoring system will continue to detect leaks and alarm until the leaks are repaired, regardless of whether a paper tag has been placed on the component. Most importantly, continuous monitoring systems by their nature work around the clock, providing a substantially higher frequency and percentage of monitoring than a third-party consultant's biannual visit.
§13.1.2 – 13.4	Revise the provision to clarify its applicability to only those affected facilities defined in Section 1.1.2, which do not include affected facilities subject to an existing LDAR program. Delete the requirement to include both equipment that is subject to an existing LDAR program and equipment that is part of the new LDAR program required by this regulation.	Limit the Leak Detection and Repair Plan required in Section 13 to affected facilities that are not subject to an existing LDAR program, in order to reduce superfluous requirements on affected facilities already subject to an existing LDAR program. The plan requirement is considered appropriate for facilities that do not have existing, defined LDAR programs; therefore, it has been retained.

§14	Revise the provision to limit its applicability to affected facilities subject to the requirements of a program for the detection and repair of equipment leaks in 40 CFR 63 Subpart NNNNN, *Hydrochloric Acid Production.*	The HCL MACT is the only LDAR program that addresses leaks of inorganic compounds. Affected sources should be allowed to incorporate applicable portions of the federal LDAR requirements to which they are subject in the District LDAR plan. The District has not fully clarified the applicability of Section 14 for inorganic LDAR, yet; although the District's response to informal comments 1.21-55 better defines the intent. As it stands, the current phraseology still has the unintended consequence of subjecting to the District's inorganic LDAR program all inorganic TACs present at affected facilities with federal *organic* LDAR programs. This is clearly not the District's intent since the response to informal comments states, "Other than the 'HCL MACT,' there is no other required LDAR program that addresses leaks of inorganic compounds. Thus, no other process unit would be defined as an affected facility pursuant to section 1.1.1." The statement the District added to Section 2 of the regulation does not correct this unintended consequence. The District should consider citing the appropriate sections of 40 CFR 63 Subpart NNNNN as the applicable requirement for inorganic leak detection monitoring to alleviate the confusion.

§14.1 – 14.1.8	Revise the provision to require preparation of an inorganic toxics leak detection and repair plan, including the suggested repair procedures, and the method for data recording and recordkeeping.	The HCL MACT only requires that the facility develop a site-specific program, which is expected to consist of audio, visual, and olfactory monitoring, and is not intended to require instrument monitoring systems that do not exist. Thus, requiring repair procedures may be inappropriate. Likewise, process repairs are dependent upon the specific situation so prescripted repairs may not be appropriate and may even be detrimental. It is not appropriate to keep monitoring data as part of the plan and we do not believe this was the District's intent. That is why the requirement was changed to "the method for data recording and recordkeeping."
§14.2	Extend the deadline for submitting the leak detection and repair plan from 120 to 180 days.	Since the technology for monitoring inorganic substances is still evolving, the period for developing a plan should be extended to allow time to research available equipment, run trials to determine suitability, and procure appropriate monitoring equipment, if available.
§14.3	Limit the provision to be a District-only enforceable requirement of the applicable District permit for the process unit included in the plan.	Regulation 1.21 is a local program. These provisions should not be federally enforceable.

Attachment
Regulation 1.21

Emission Reduction Costs

Example 1:

- ★ Company 1 estimates the proposed LDAR program will have no emission reduction effect, since they already manage their program with similar leak detection objectives. Since it is not possible to divide by zero, assume 1 lb of emissions reductions will be achieved.
- ★ The estimated cost for Company 1 to add 2 appropriately qualified Full Time Equivalents to come into compliance with the HON portion of the program is $200,000.
- ★ The estimate for the audit program is $20,000.
- ★ The cost of monitoring equipment purchase and maintenance has not been included, nor has the cost of any data management system.
- ★ Therefore:

$$\frac{\$200,000 + \$20,000}{1lb} * \frac{2000lb}{ton} = \$440,000,000 / ton$$

Example 2:

- ★ Company 2 estimates the proposed LDAR program will have minimal emission reduction effect, since they already manage their program with similar leak detection objectives. Assume 10 lb of emissions reductions will be achieved.
- ★ The estimated cost for Company 2 to add 2 appropriately qualified Full Time Equivalents to come into compliance with the HON portion of the program is $180,000.
- ★ The estimate for the audit program is $20,000.
- ★ The cost of monitoring equipment purchase and maintenance has not been included, nor has the cost of any data management system.
- ★ Therefore:

$$\frac{\$180,000 + \$20,000}{10lb} * \frac{2000lb}{ton} = \$40,000,000 / ton$$

Comments on Regulation 2.08

- Regulation 2.08 does not explain how the STAR Program will be funded after Fiscal Year 2005. Since it is apparent that the majority of the implementation of the STAR Program will occur after Fiscal Year 2005, the District should explain and account for how the program will be funded after Fiscal Year 2005. Failure to do so does not properly assess the costs of implementation of the STAR Program, which the District is required to do in the Regulatory Impact Assessment.

- Since Regulation 2.08 does not specify how the STAR Program will be funded after Fiscal Year 2005, the District should identify in the Regulatory Impact Assessment whether it may be necessary to increase fees on the affected facilities to fund the STAR Program after Fiscal Year 2005. If this is the case, the District should state that now and provide the estimate of what increase in fees will be necessary to fund the STAR Program through the entire period of implementation, which will extend at least until 2012. Otherwise, the District should explain what funding sources other than increased fees will be used after Fiscal Year 2005 to fund the STAR Program.

- The Task Force recommends that financial incentives be provided in this proposed fee structure for a facility to decrease, or even eliminate, its TAC emissions.

Comments on Regulation 5.01

- The definition of "benchmark ambient concentration" should be amended to be consistent with the Michigan R336.1109(d) definition of "initial risk screening level," which has some established precedent regarding the interpretation and regulatory use of this term.

- The proposed de minimus exemption in Section 1.6.1 allows a facility to not have to determine if a TAC is present in purchased chemicals below percentage concentration levels routinely reported in a MSDS. The proposed provision does not clarify whether the percentage cutoffs are by weight percent or volume percent. Generally, MSDS data is in weight percent and this basis should be used in the regulation.

- In addition to the MSDS exemption in 1.6.1, this percentage composition exemption should similarly be extended to internal process streams, not just purchased chemical mixtures which have a MSDS. Without a similar exemption, the regulation will require significant efforts to characterize the smallest trace concentrations of TACs in a facility's internally generated streams, and perform rigorous analysis of this data with little added benefit to public health.

- The definition of "de minimus emission" should be amended in Section 1.6.5 and to add a new Section 1.6.6 to extend the exemption for a new or modified surface coating process with emissions of less than 5 tons per year of VOC emissions to any existing, new or modified process that has emissions of less than 5 tons per year.

- It is arbitrary to exempt a surface coating operation which has volatile organic compound emissions of less than 5 tons per year, and to not also exempt all other processes that emit volatile organic compounds less than 5 tons per year. It is also arbitrary to not apply the exemption to existing processes. At a minimum, any existing, new or modified process that emits the same type of VOCs as emitted by surface coating processes should be deemed to be a de minimus exemption if emissions of the VOC are less than 5 tons per year.

- A new Section 1.7.5 should be added to provide that all cold cleaners, not merely cold cleaners at stationary sources as listed in Section 1.7.4, are exempt from the STAR Program.

- The general duty provision in Regulation 5.01, Section 3 should be amended to be the same as the general duty provision established in 401 KAR 63:020 Section 3. Since the requirements of Regulations 5.11 and 5.12 are based upon the former provisions of 401 KAR Chapter 63, the general duty provision should also be consistent with the general duty provision in that chapter.

Comments on Regulation 5.20

- Regulation 5.20 Section 2 should be amended to provide that a toxic air contaminant shall only be determined to be a carcinogen if it is identified as a carcinogen by:

    - the EPA Integrated Risk Information System (IRIS);
    - the International Agency for Research on Cancer (IARC);
    - the Agency for Toxic Substances and Disease Registry (ATSDR); or
    - the National Toxicological Program, the most recent on carcinogens.

  These agencies make a determination whether a toxic air contaminant is a carcinogen on the basis of peer reviewed scientific evidence and data.

- Section 2.1.4 of Regulation 5.20 should be deleted, since the District should not make a determination whether a TAC should be considered to be a carcinogen. As recognized by the District in its response to the informal comments, the District will not have a toxicologist on staff. Since the District will not have the requisite technical expertise on staff, it should not place itself in the position of making a determination as to whether a TAC is a carcinogen.

- The calculation of the benchmark ambient concentration is far too conservative for the purpose that the BAC is used in the STAR Program. The factors used to determine the BAC already contain many conservative elements, already account for a potential 70 year continuous exposure, and should be adjusted in accordance with sound toxicological and risk analysis methodologies.

- Section 3 of Regulation 5.20 should be amended to provide that if a unit risk estimate (URE) has not been identified in IRIS, then the methodology presented in EPA's Technology Transfer Network FERA Air Toxics Risk Assessment Reference Library shall be used to develop URE. The Air Toxics Risk Assessment Reference Library establishes the fundamental principles for risk based assessment of air toxics and how to apply those principles.

- The use of factors from California and Michigan in Sections 3.3.2 and 3.3.3 of Regulation 5.20 is inappropriate because the California and Michigan programs do not adequately identify the specific scientific methodology and criteria or used to develop cancer potency estimates for the respective TACs or whether the determinations of those agencies were based upon peer reviewed scientific evidence and data. Moreover, citizens of Jefferson County, Kentucky did not have the opportunity to comment on or participate in the development of use factors in the California or Michigan programs.

- The District should allow as an alternative to the determination of a URE based upon IRIS or the methodology of the Air Toxics Risk Assessment Reference Library, a cancer risk benchmark determination methodology to derive a URE, or

alternatively a BAC_c directly, if the alternative is demonstrated to be more appropriate based on biological grounds and is supported by peer reviewed scientific evidence and data.

- The other equations and the default value for determining a URE in Section 3 of Regulation 5.20 should be deleted from the STAR Program because those equations have not been demonstrated to be based upon peer reviewed scientific evidence and data. The scientific basis for those equations has high levels of uncertainty and variability. The methodology of those equations is no longer recommended by EPA for quantitative risk analysis and only provides a general qualitative estimation of theoretical health risk that is not suitable or reasonable for establishing specific, quantitative risk-based standards.

- Section 3 of Regulation 5.20 should provide that if a URE or BAC_c for a TAC is not determined based upon IRIS, the Air Toxics Risk Assessment Reference Library or an alternative methodology, the TAC should be evaluated only on a chronic non-cancer risk basis.

- Section 4 of Regulation 5.20 should be amended to provide that a benchmark ambient concentration for non-cancer risks shall only be determined on the basis of a reference concentration identified in IRIS or by use of the methodology presented in the Air Toxics Risk Assessment Reference Library.

- The other equations for determining a BAC_c should be deleted, since those equations have not been demonstrated to be based upon peer reviewed scientific evidence and data for the purpose for which the equations are used in the proposed STAR Program regulations. The scientific basis for those other equations has high levels of uncertainty and variability. The methodology of those equations is no longer recommended by the EPA for quantitative risk analysis and would provide only a general qualitative estimation of theoretical health risks that is not suitable for establishing quantitative risk-based standards.

- Section 4.1 of Regulation 5.20 establishes an acceptable but overly conservative basis for determining a BAC_c. The equation is too conservative because it assumes a continuous 70 year exposure, which is inconsistent with accepted risk analysis methodology.

- The equations for determining a BAC_c in Sections 4.2 and 4.4 of Regulation 5.20 should be deleted, since the use of factors from California and Michigan is inappropriate because those programs do not identify the specific scientific methodology and criteria used to develop cancer potency estimates for the respective TACs or whether the determinations were based on peer reviewed scientific evidence and data.

- The equation for determining a BAC_{nc} in Section 4.3 of Regulation 5.20 should be deleted, since it requires professional judgment involving extrapolation of toxicity

data. Since the equation does not provide for use of that professional judgment, it is inappropriate for use in the STAR Program.

- The equation in Section 4.5 of Regulation 5.20 should be deleted, since the use of the equation requires professional judgment to determine if occupational exposure levels are appropriate for an ambient, general population exposure level.

- The equations in Sections 4.6 through and including Section 4.11 of Regulation 5.20 should be deleted, since use of these equations require professional judgment to determine appropriate toxicological studies for the basis of the toxicity values to be used to calculate the BAC_{nc}.

- The default value in Section 4.11 of Regulation 5.20 should be deleted, since there is no demonstrated basis for the use of this default value.

- The method for determining a BAC_{nc} in Section 4.12 of Regulation 5.20 should be deleted, since use of the method requires professional judgment to determine the appropriateness of the toxicity data.

- In Section 4 of Regulation 5.20, the District proposes the use of various "safety factors" when calculating a BAC_{nc} when using toxicity data that demonstrated a no observable adverse effect level (NOAEL) or a lowest observable adverse effect level (LOAEL). As an example, in Section 4.6, when calculating a BAC_{nc} from an NOAEL from a 7 day exposure period (a subchronic study), a safety factor with a value of 35 is used to account for estimating a lifetime NOAEL. Also, a safety factor of 100 is required to be used to account for interspecies and intraspecies differences. Further, an uncertainty factor (UF) with a value from 1-10 is to be used when calculating a BAC_{nc} based on a LOAEL rather than a NOAEL. This methodology results in a total safely factor of 3,500 when calculating a BAC_{nc} from a NOAEL, and possibly a total safety factor of up to 35, 000 when calculating a BAC_{nc} from LOAEL. The EPA, as presented in IRIS, also uses safety factors when calculating RfCs (comparable to a BAC_{nc}). In contrast, however, the EPA safety factors are as follows: only a factor of 10 for extrapolation from a subchronic study to a chronic effect, a range of values of up to 10 (perhaps as low as 3) to account for intraspecies differences, a factor of 10 for interspecies differences, and a range of up to a value of 10 (or as low as 3) for using a LOAEL rather than a NOAEL. This demonstrates that the safety factors used by the District in Section 4 of Regulation 5.20 are not based upon sound methodology. Using District methodology would result in a total safely factor of 3,500 (for an NOAEL) or 35,000 (for an LOAEL), while the EPA methodology may result in total safely factors for the BAC_{nc} determination of 300 (for a NOAEL) or 900 (for a LOAEL). The District methodology results in a BAC_{nc} that may be up to 40 times less than a BAC_{nc} that would be calculated by using EPA methodology.

- Section 5 of Regulation 5.20 should be deleted, since the District should not make a determination as to whether a BAC_{nc} does not provide adequate protection from the acute effects of a TAC. A determination of acute effects from a TAC should only be made by EPA as stated in IRIS, IARC, ATSDR or the National Toxicology Program.

Reg. 5.21 –Environmental Acceptability Levels

- The proposed STAR Program is significantly more stringent than any other state program we have reviewed (AL, IL, IN, CA, KA, FL, MI, OH, TN, NC). Although a couple of these state programs use similar risk standards, those programs apply these standards differently. Key differences in stringency include the fact that most other state air toxics programs only regulate increased emissions from new and modified sources, most programs have less stringent standards which apply only to individual TACs, do not aggregate the risks of different TACs at a facility, and do not have standards regarding the aggregate risks from multiple facilities. For example, one of the most heavily regulated states in the country, California, is less stringent on existing facilities than the STAR program proposes. Even in the San Francisco Bay area, the Bay Area Air Quality Management District (BAAQMD) does not require risk reduction measures for existing facilities unless their health risks are greater than 100 in one million (2002 Status Report: BAAQMD Toxic Air Contaminant Control Program). Interestingly, the health risk in the San Francisco Area from exposure to TACs is reported to be 162 in one million. This is similar to the highest levels measured in Louisville by the WLATS Risk Assessment which ranged from 38 to 170 in one million (median cancer risk from all contaminants of potential concern). This illustrates that other areas, with similar exposure levels, and long histories of strong environmental consciousness, have not judged it appropriate to impose standards as stringent as some aspects of the proposed STAR program. The revised standards proposed by GLI represent a much more appropriate balance of risk and benefit.

- The definition of "best available technology for toxics (T-BAT)" should be amended to be consistent with Michigan R336.1102(a) to provide language which has some history of use and established precedent. Also, the District's addition of a consideration of "limiting hours of operation" in determining T-BAT should be deleted, since this is intended to be a definition of a technology. Limitations on hours of operation are not technologically based.

- The definition of "existing process or process equipment" should be amended to include an existing permitted process or process equipment, or a process or process equipment for which a construction permit was issued prior to the effective date of the regulation or for which a construction permit application was pending as of January 14, 2005, the date that the second version of the STAR Program was released for public comment.

- The definition of "new or modified process or process equipment" should be amended to provide that a new or modified process or process equipment is a process or process equipment for which a construction permit application was submitted after January 14, 2005, the date that the second version of the STAR Program was released for public comment.

- In Section 2.2.1, the environmental acceptability goal for non-cancer risk from an individual TAC from an individual new or modified process or process equipment should be changed from an Hazard Quotient of 0.2 to 1.

- The proposed BAC and HQ goals are set unrealistically low. An overly restrictive policy will discourage existing or new business development without necessarily providing a corresponding health benefit. The District's currently proposed acceptable risk standards may be unattainable by many existing businesses despite use of state-of-the-art pollution controls. In using risk estimates for decision-making, EPA has stated that it applies the following principle:

> In protecting public health with an ample margin of safety, EPA strives to provide maximum feasible protection against risks to health from HAPs by (1) protecting the greatest number of persons possible to an individual lifetime risk level no higher than $1x10^{-6}$ (one in a million) and (2) limiting to no higher than approximately $1x10^{-4}$ (one in ten thousand) the estimated risk that a person living near a source would have if exposed to the maximum pollutant concentrations for 70 years.

Air Toxics Risk Assessment Reference Library, pp. 27-5,6 (citing the preamble to the benzene NESHAP rulemaking, 54 *Federal Register* 38044, September 14, 1989). In accordance with this principle, EPA more recently has determined that "a maximum individual risk of approximately 100 in a million should ordinarily be the upper end of the range of acceptable risks associated with an individual source of pollution." 69 *Federal Register* 48338, 48348, August 9, 2004 (Proposed NESHAP for Coke Oven Batteries Rule). This higher acceptable risk level is consistent with that used by many other programs, including the Kentucky Voluntary Environmental Remediation Program (VERP). In addition, in a presentation made by Dr. Kenneth Mitchell to the State Air Toxics Work Group on January 26, 2005, Dr. Mitchell explained in his work at the EPA on residual risk that the standard risk range is from one-in-a-million to a hundred-in-a-million. A copy of Dr. Mitchell's handout to the Work Group is attached.

Consistent with the above, the following risk goals and standards are more appropriate.

- the currently proposed goal of a $1x10^{-6}$ cancer risk is an acceptable initial screening goal for a single new or modified process for an individual TAC (Section 2.2.1). However, the acute HQ should be changed from 0.2 to 1. According to EPA, no adverse effects are expected as a result of exposure for a HQ calculated to be 1 or less than 1. An HQ of 1 is functionally the equivalent of a cancer risk of 1-in-a-million: i.e.; concentrations below this corresponding level is generally considered to represent no risk of adverse effects. This is

consistent with the methodology used in the West Louisville Air Toxics Study (WLATS) Risk Assessment, the residual risk standard determination by the EPA that was mandated by Congress under the Clean Air Act, and the National Contingency Plan (NCP).

- In Section 2.2.2, the goals for an individual Category 1, 2 or 3 TAC from all new or modified processes or process equipment at a facility should be changed to a cancer risk of $1x10^{-5}$ and an HQ of 5. This is also consistent with the secondary risk screening level used in Michigan for cancer risk and takes into account that the calculation of a BAC_c and BAC_{nc} are already based on a continuous lifetime exposure of 70 years. See the EPA Technology Transfer Network National Air Toxics Assessment, Summary of Results, p. 5, a copy of which is attached, which states that the "entire U.S. population is estimated to exceed a cancer risk level of 10 in a million due to background sources alone."

- Section 2.2.3, which provides a limit for the summation of the risks of all TACs, should be deleted, since summing of all different TAC risks for this purpose is inappropriate. These theoretical risk levels are based on calculations that estimate the upper bound of possible risk. The summing of multiple upper bound estimates is mathematically and biologically incorrect. This observation is also stated in the WLATS Risk Assessment. Additionally, available air dispersion models do not accommodate summing risks of different TACs. The Task Force is unaware of any approved protocol that can be used to determine the point of cumulative maximum risk exposure when different TACs, with different BACs, are emitted from multiple emissions points. Requiring an analysis of this level of complexity is highly unusual, and adds very little benefit to the STAR Program. Nevertheless, we do recommend leaving the provision (Section 4.10) allowing the District to consider synergistic or additive effects and to apply more stringent standards if synergistic or additive effects are demonstrated on the basis of peer reviewed scientific evidence or data. In addition, the summing of all carcinogenic TACs is provided as a consideration for a request to exceed the EA levels in Sections 2.2.2 or Section 2.5.2, as provided in Sections 2.3.1 and 2.6.1 in the proposed revisions to the STAR Program.

- Section 2.3.1 should be amended to provide that an owner or operator may request to exceed an EA goal in Section 2.2.2 provided that the applicable EA standard in Section 2.5.2 is met or T-BAT is used on the new or modified process or process equipment. In no case should the allowed maximum concentration exceed an EAL of $1x10^{-4}$ or an EAL non-cancer HQ of 20 without Board approval pursuant to the variance process. This is consistent with the NCP, the methodology used to

establish the Maximum Contaminant Level standards (MCLs) under the Safe Drinking Water Act, determination of residual risk under the Clean Air Act, the benzene NESHAP rule, and the Kentucky VERP.

- Section 2.5.2 should be amended to establish a standard for emissions for an individual TAC from all existing and new processes or process equipment from a single facility at a cancer risk of 25-in-a-million or an HQ of 10. This takes into account the NCP, *Risk Assessment Guidelines for Superfund*, the benzene NESHAP rule, the EPA methodology for determining residual risk, the methodology used to establish the MCLs, and the Kentucky VERP.

- Section 2.6.1 should be amended to provide that an owner operator may request to exceed the EA standards in Section 2.5.2, provided that the proposed maximum concentration reflects the application of T-BAT. In no event, can the allowed maximum concentration exceed an EAL of $1x10^{-4}$ or an EAL non-cancer HQ of 20 without Board approval pursuant to the variance process. This is consistent with the NCP, the Clean Air Act, the Safe Drinking Water Act, and the Kentucky VERP.

- Section 2.8 should be deleted because in the initial implementation of the STAR Program, facilities should be evaluated on an individual facility basis. This is reasonable given the high levels of variability and uncertainty involved with multiple sources, spatial and temporal variations, and toxicological uncertainties. Additionally, it is unclear what modeling/mathematical tools are available to rigorously determine maximum combined risks for multiple facilities and multiple TACs without making additional worse-case simplifying assumptions. This District proposed regulatory element adds a tremendous complexity and uncertainty to the regulation without a corresponding significant benefit. Also, the general duty clause of the rule grants the District sufficient authority to address any clearly cumulative impact issues without imposing this additional modeling demonstration burden on all facilities.

- The STAR Program should not address community-scale assessment of air toxics, or modeling of emissions from multiple facilities, until the U.S. EPA Air Toxics Risk Assessment Reference Library Volume 3, which is currently under development is completed. That Volume 3 is intended to provide methodology for this purpose that should be used in community-scale assessment and multi-facility modeling.

- Section 4 should be amended to extend the timelines for the implementation of the Program. Facilities should be provided sufficient time after the STAR Program becomes effective to implement the complex requirements.

- Section 4.8 should deleted to be consistent with the deletion of Section 2.8.

- A new Section 5.6 should be added to clarify that an owner or operator may request a variance from the Board in accordance with the variance procedure established in KRS Chapter 77.

- As a final comment regarding risk, the Task Force recognizes the difficult task involved in gaining perspective on what an acceptable risk exposure should be. As discussed above, EPA, California and other states have, over time, become comfortable with a potential lifetime cancer risk level from a stationary source's operation of about 100 in one million. To help illustrate how this insignificant risk level relates to a person's overall lifetime risk of cancer, it is helpful to understand that an average person has an overall cancer risk of nominally about 33%. Phrasing this risk in the units of the STAR program it would be a risk of 330,000 in one million or 0.33. GLI proposes that the standard for the maximum risk level from all new and existing sources of a TAC from a facility be allowed to be no higher than 100 in one million or 0.000100. The District proposed regulation would allow no more than 7.5 in one million or a risk level of approximately 0.000007. Therefore, the Task Force proposed revisions would allow the maximum exposed individual risk to be increased, versus the District's proposal, from 0.330007 to 0.3301. The difference in these risk levels is so low that it would not be a statistically discernable increase or decrease in incidents of cancer in the community. In contrast, according to the American Cancer Society, over one third of our total cancer risk is related to diet and activity factors. Another roughly one third of cancer incidents are related to smoking. These lifestyle choices impact someone's risk of contracting cancer by thousands of times more than the acceptable risk difference that is being debated regarding the STAR program.

Comments on Regulation 5.22

- Regulation 1.02 Section 1.7 defines ambient air to include air to which the general public does not have access, which is contrary to federal and state definitions. The District responded to this informal comment previously by referencing an April 30, 1987 EPA memorandum. There are two memoranda dated April 30, 1987, one of which allows exclusion for property not accessible to the public, the other limiting the exclusion to the owners' property. In either case, these exclusions do not allow for the use of secured property for purposes of dispersion modeling under Regulation 5.22. The referenced memorandum has been superceded by other EPA policy memoranda and an EPA Administrative Law determination in PSD Appeal No. 87-3 8.39 (Hibbing Taconite Company Petitioner).

- For purposes of conducting Tier 3 and 4 modeling specified in Proposed Regulation 5.22 Sections 4 and 5, the District should adhere to federal policy on the definition of ambient air, including EPA's New Source Review Manual and the above referenced current policies so that risk levels based on such models are, in fact, indicative of risk to the public and not at receptors which may be located in secured areas to which the public has no access. There is no justified reason to change the definition of ambient air for purposes of assessing risk to the public when the public does not have access to neighboring secured property.

- Maximum receptor concentrations located inside industrial facilities will be used to calculate allowable emissions even though this air is regulated by OSHA and is not accessible to the public. Sources located downtown, for instance, might be regulated based on their projected impacts on roof tops of commercial buildings. Sources located in industrial areas may be regulated based on impacts on their neighbor's VOC storage tank. Industrial facility air is normally afforded OSHA PEL level concentrations and is protected by other stringent health-based regulations. Unreasonably low, perhaps unachievable, allowable emission rates could be imposed at severe cost, with no benefit to the public.

- Conversion factors in Table 1, Section 3.5 and Section 4.2 required to be used to go from one ambient concentration averaging time to another do not match EPA's conversion factors and the conversion factors in Section 4.2 do not match the factors in the Michigan rules from which the method was copied. The explanation provided in response to informal comments is that the District thinks the ones proposed are better, with a reference to those developed by use of the SCREEN3 model by another agency (as described in Attachment 1 to the Preliminary Regulatory Impact Assessment). The referenced document describes the factors and how they are used but does not describe how they were specifically developed. The meteorological data used, receptor elevations and source stack parameters assumed in developing the table are not detailed. Therefore, the applicability of the conversion factors to an actual emission point may produce erroneous risk levels, or risk levels that do not impact the public.

- Table 2 of the Regulation does not allow an influential building height of more than 80 feet. The table should be extended to accommodate Jefferson County sources actual influential building heights greater than 80 feet to provide a more realistic treatment of the estimated concentration values produced using the Tier 2 method.

- If the stack is not attached to a building, then the regulation stipulates a building height of 40% of the stack height shall be assumed. In addition, the table does not accommodate a stack height of more than 200 feet. The table should be extended to accommodate Jefferson County source actual building heights and stack heights to provide a more realistic treatment of the estimated concentration values produced using the Tier 2 method.

- According to the proposed regulation, if the distance to the secured property line is between two values listed in Table 2, the shorter of the two is to be used to determine the Annual Factor. The proposed regulation allows interpolation of influential building height and stack height to influential building height interpolation as an option to selecting the lower table value. The regulation should also allow interpolation of distance to secured property line as an option.

- The proposed regulation uses three layers of calculation for allowable emissions. First, each emission point's max receptor concentration is compared to a risk limit. Then, all permutations of emissions points and pollutants individual max concentrations are summed to get a facility-wide risk level which is compared to a slightly higher allowed risk limit. Last, all facility-wide risk levels for the county are summed and compared to a county-wide risk limit. Since summing of risk levels assumes maximum impacts occur at the same receptor at the same time, an unusually high cumulative risk level will be calculated, making compliance with the risk limits highly conservative. In addition, according to existing dispersion modeling protocols for the models allowed in the proposed regulations, there are no methods that would assure matching of temporal and spatial receptor concentrations to calculate a predicted maximum cumulative risk. The District should include in the regulation a detailed description or reference an approved model or set of approved models for determining maximum concentration for multiple TACs from multiple emission points consistent with accepted practice.

- The District has provided a background document (Attachment 1 to the Preliminary Regulatory Impact Assessment) on how the proposed benchmarks and associated tabular calculation methods were developed. However, there is no explanation on how the method used relates to human health risk, or why the tables for building and stack height factors based on use of SCREEN3 are reasonable (there is a lot of language about why the method is conservative, but nothing about whether the method is documented as a valid approach). The background documents merely relates what Michigan did to come up with its approach of dividing a goal of 1×10^{-6} by the Unit Risk Factor for the substance.

A better approach would be to have offered an option to allow for human risk models using census data and meteorological dispersion in truly ambient air for comparison to the goal of 1 x 10^{-6} risk at a specific meaningful receptor that relates to human exposure, such a census tract centroids, a hospital, a school or some other landmark to which all computations would be directed and compared.

- The equations in Section 2 assume there are allowable emissions limits with which to calculate maximum concentrations. This is not the case for a large number of emission points regulated by MACT technology standards and LDAR. Further, many if not most of the present District regulations do not contain a set allowable emissions rate for emission points, as they are technology based standards, or floating allowable emissions rates based on throughputs. Similarly, use of potential-to-emit assumes one can compute such potential, where in fact, this may not be possible. Or if possible, the District proposed regulations should conform to the federal definition of potential-to-emit, rather than disallowing existing control equipment to count in the calculation.

- The proposed regulation only cites the models in 40 CFR 51 Appendix W, Appendices A and B, as approved models for use in Regulation 5.22. This overlooks many EPA models approved for use on the EPA web site, and in risk assessment protocols issued by EPA. One example is the *Air Toxics Risk Assessment Reference Library Volume 2 - Facility-Specific Risk Assessment,* EPA publication EPA-453-K-04-001B. Since there are only two point source models listed in Appendix W as opposed to approximately 10 other models from EPA for point sources, there is no approved option for assessing actual human risk in Jefferson County. District should add a Tier 5 to its allowed models for human exposure risk assessment, the outputs of such models being useable to compare directly to the risk goals and standards being proposed in Regulation 5.20. Regulation 5.22 should be amended to allow a Tier 5 modeling based upon the use of exposure models.

- Calculation of the cumulative risk from an entire facility as specified in Regulation 5.21 to compare to a cumulative risk standard of 7.5 at the maximum receptor may not be possible if a source uses a mixture of Tier 1, 2, 3 and 4 models. For instance, no distance or direction of the maximum concentration is provided when Tiers 1 and 2 are used. How will the cumulative risk be computed in such situations? How should cumulative risk be calculated while observing the temporal and spatial protocol requirements used in Tier 4 modeling?

- The proposed regulation only cites the models in 40 CFR 51 Appendix W, Appendices A and B, as approved models for use in Regulation 5.22. There is no Appendix B to 40 CFR 51 Appendix W.

- Given the permutations of analyses required by the regulations, there may be thousands of analyses to be submitted (a low estimate would be 173 facilities x 10 emission points x 2 TACs each = 3460 single point TAC analyses alone), and

thousands of compliance reduction programs and variance requests to match. The District budget calls for two additional staff to handle the work load. How does the District plan to review and approve compliance programs and variance requests in a timely manner an issue the resultant permit revisions so that industry can comply by the deadlines in the proposed regulations?

- For use of the Tier 4 ISC3 Model in Section 5 of Regulation 5.22, the District should confirm that the dry or wet deposition option is allowed to evaluate concentrations created by particulate sources as necessary.

- For use of the Tier 4 Model, most facilities cannot and do not sustain the maximum processing rate for any prolonged period of time. For annual and 24 hour average BACs and, possibly, for 8 hour average BACs, more realistic emission rate estimates should be used.

- Hourly, monthly, seasonal, and other adjustments to the point source emission rates and wind speed dependent emission rates for fugitive particulate sources should be allowed for inclusion in Tier 4 modeling.

- Using the Tier 4 modeling, impacts from low-buoyancy sources are greatly over estimated in calm weather conditions because the model does not take into account pollutant meandering. Point source emission rate adjustments for low level fugitive and pseudo-point sources should be authorized as reasonably conservative adjustments to the predicted impacts of the model.

- As currently specified in proposed Regulation 5.22, the modeling that will be performed will be performed in an inappropriate manner. The models are being used to identify a quantitative risk of exposure, something which the models are not designed to do. In addition, the results of the modeling are used in an inappropriate way since the results are being compared to environmental acceptability levels that are purportedly intended to be representative of a quantitative risk of exposure.

- Section 4 of Regulation 5.22 should be amended to provide that the maximum concentration determined by Tier 3 modeling is to be at the distance from the emission point to the nearest offsite centroid of a census track.. This is consistent with EPA guidance for modeling and the EPA methodology for calculating residual risk for populations, and takes into account the transient nature of the population, which is unlikely to be exposed to a 70 year continuous risk.

- Section 5 of Regulation 5.22 should be amended to provide that the maximum concentration determined pursuant to the Tier 4 modeling shall be at the centroid of the nearest offsite census track to be consistent with EPA guidance for modeling and risk assessment. The maximum concentration should be based upon the arithmetic mean of the concentrations modeled at that location, because the arithmetic mean of the concentrations represents the exposure to receptors at

that point. This provision also takes into account spatial, temporal, and population variability and uncertainty in the model.

- Regulation 5.22 should be amended to provide for an adjustment factor for fugitive emissions when modeling under Tiers 3, 4 or 5, since those models do not accurately model fugitive emissions. EPA's SCREEN and Industrial Source Complex ("ISC") models, Tier 3 and Tier 4 under the proposed STAR Program, significantly overestimate concentration predictions from fugitive emissions. As noted by the Texas Natural Resource and Conservation Commission ("TNRCC"), such overestimation may "require costly control strategies to meet air quality objectives with no real improvement in actual air quality."[44] As a consequence, Texas has mitigated the impact of the model overestimation through the application of an adjustment factor for use with EPA's SCREEN and Industrial Source Complex ("ISC") models.[45]

  TNRCC's adjustment factor models fugitive emissions near the ground at 60% of their emission rate to address issues related to low-level fugitive emissions raised during its standard exemption protectiveness review project and by U.S. EPA during its development of the models.[46] Some of the concerns raised by TNRCC as the basis for its adjustment factor include:

  1. Emissions from fugitive sources cannot be readily quantified. TNRCC March 6, 2002 Memo, p. 2.

  2. EPA has adopted practices and procedures that cause the SCREEN and ISC models to predict high concentrations for low-level fugitive releases. TNRCC March 6, 2002 Memo, p. 4.

  3. Because it is difficult to match meteorological conditions to batch or sporadic operations since exact run times may not be known, the models over-predict low-level emissions associated with these operations. TNRCC March 6, 2002 Memo, p. 2.

  4. Stability and light wind assumptions in the models seriously overestimate short-term concentrations from low-level sources. TNRCC March 6, 2002 Memo, pp. 4,5.

  5. Slight errors in estimating wind direction may result in large errors in predicted concentrations at specific locations when pollutant plumes are narrow and winds are assumed to be stable. TNRCC March 6, 2002 Memo, p. 5.

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[44] TNRCC March 6, 2002 Guidance: *Modeling Adjustment Factor for Fugitive Emissions*, March 6, 2002, p. 1.
[45] *See* TNRCC March 6, 2002 Guidance: *Modeling Adjustment Factor for Fugitive Emissions.*
[46] *Id.*, p. 1.

6. Sampling times for vertical dispersion, i.e., stack emissions, may not accurately predict horizontal dispersion. TNRCC March 6, 2002 Memo, p. 5.

7. The models assume that wind speed near the ground is the same as at 10m, which may cause the model to overestimate concentrations. TNRCC March 6, 2002 Memo, p. 6.

In selecting the 0.6 factor to more accurately estimate low-level fugitive emissions, TNRCC stressed that the new procedure is as conservative as the agency's prior practice, which included directly adjusting the model to more accurately predict emissions on a case-by-case basis using engineering judgment, but is significantly less labor intensive and more streamlined.

Comments on Regulation 5.23

- Section 3 of Regulation 5.23 includes diesel particulate matter as a Category 3 toxic air contaminant. Is the diesel particulate matter only intended to be applied to mobile sources, or does it also pertain to non-mobile source diesel engines? Please explain how a facility is to account for diesel particulate matter from non-mobile sources.

- The Category 1 TACs should be amended to list only hexavalent, and not trivalent, chromium as a Category 1 TAC. The WLATS Risk Assessment did not speciate between hexavalent and trivalent chromium, but assumed that all chromium is hexavalent chromium. Since hexavalent chromium is more toxic than trivalent chromium, and should be assessed for both cancer and non-cancer risk, it should be retained as a Category 1 TAC. Trivalent chromium should be included as a Category 4 TAC.

- As explained in other comments, the use of the *Screening Analysis* to determine which substances should be subject to regulation under the STAR Program is inappropriate. Therefore, the Category 2 TAC list should be deleted. Those TACs that are listed in Category 2 that are also included on the list of compounds identified by the EPA as presenting significant risk to public health in urban areas should be included in Category 3, which should be renumbered as Category 2. Those TACs that are listed in Category 2 that are included in the EPA list of hazardous air pollutants should be included in Category 4, which should be renumbered as Category 3.